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Annual Planning Information Report 1991

Michigan

ANNUAL PLANNING INFORMATION REPORT

PROGRAM YEAR 1991
(July 1991 through June 1992)

MICHIGAN

Prepared by

MICHIGAN EMPLOYMENT SECURITY COMMISSION
Bureau of Research and Statistics
Labor Market Analysis

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PREFACE

This Annual Planning Information Report, published by the Michigan Employment Security Commission, Bureau of Research and Statistics, is an attempt to fulfill many of the data needs required by local planners. This report contains standardized information which is comparable with that prepared for the other service delivery areas in Michigan. Data prepared by MESC is published along with information from other agencies in an attempt to provide area planners with an awareness of the broad range of information which is currently available for local planning purposes. The report's appendices contain specially prepared information tables intended to be used in conjunction with other data and narrative portions of this report.

This information was developed to meet the Michigan Department of Labor, Bureau of Employment and Economic Development's current planning guidelines and is the most comprehensive program year data currently available. The MESC Labor Market Analysis staff utilized various data resources to estimate or project area planning information. In order to facilitate the use of this package, sections on table descriptions and glossary of terms are included. Data limitations, interpretation, and application are discussed in the table description section. User questions and suggestions are welcome.

TABLE OF CONTENTS

PREFACE iii

LIST OF TABLES. vii

LIST OF FIGURES ix

HIGHLIGHTS. xi

I. POPULATION 1

II. LABOR FORCE 13

III. INDUSTRY EMPLOYMENT 27

IV. OCCUPATIONAL EMPLOYMENT PROJECTIONS 43

V. JTPA TARGET POPULATION GROUPS 49

VI. TABLE DESCRIPTIONS. 67

VII. APPENDICES. 75

LIST OF TABLES

I.A	1980 - 1988 POPULATION	5
I.B	1990 POPULATION DISTRIBUTION	6
I.C	MICHIGAN FAMILIES BELOW POVERTY - 1980	9
I.D	TOTAL AND ECONOMICALLY DISADVANTAGED POPULATION - 1989	11
II.A	LABOR FORCE CHARACTERISTICS 1980 AND 1989.	16
II.B	LABOR FORCE ADJUSTED ECON. DISADV. - 1989.	20
II.C	ECON. DISADV. POPULATION AND LABOR FORCE - 1989.	22
II.D	LABOR FORCE PROJECTIONS - MICHIGAN	24
II.E	UNEMPLOYMENT RATE PROJECTIONS - SDA'S.	25
III.A	PRIVATE INDUSTRY EMPLOYMENT - 1989	31
III.B	TOP TEN PRIVATE INDUSTRY EMPLOYERS - 1989.	33
III.C	MANUFACTURING SHARE OF TOTAL JOBS.	35
III.D	EMPLOYMENT DISTRIBUTION BY FIRM SIZE	36
III.E	AREA INDUSTRY EMPLOYMENT TRENDS.	37
III.F	MANUFACTURING EMPLOYMENT - SIZE OF FIRM.	38
III.G	MICHIGAN GROWTH INDUSTRIES	39
III.H	INDUSTRY EMPLOYMENT PROJECTIONS.	40

LIST OF TABLES (Continued)

V.A TITLE II ELIGIBLE POPULATION 51

V.B ECONOMICALLY DISADVANTAGED POPULATION. 52

V.C ECONOMICALLY DISADVANTAGED LABOR FORCE 53

V.D HANDICAPPED - 1980 54

V.E HIGH SCHOOL DROPOUTS - 1980. 55

V.F TEENAGE PARENTS - 1980 56

V.G LIMITED ENGLISH PROFICIENCY - 1980 57

V.H ALCOHOLICS AND ADDICTS - FY 1988 - 1989. 58

V.I OFFENDERS - JULY 1990. 59

V.J VETERANS - 1980. 60

V.K DISPLACED HOMEMAKERS - 1980. 61

V.L RATIO OF GOVERNMENT TO WAGE AND SALARY EMPLOYMENT. . . 62

V.M RATIO OF PRIVATE EMPLOYMENT TO POPULATION. 63

V.N WELFARE REGISTRANTS - JULY 1990. 64

V.O DISLOCATED WORKERS - MESC JOB SERVICE - PY 1989. . . . 65

LIST OF FIGURES

1. MICHIGAN POPULATION - 1980 - 1990. 3
2. AREAS OF POPULATION DECLINE. 4
3. 1980 POPULATION BY RACE. 8
4. TOTAL AND ECON. DISADV. POPULATION 10
5. ECON. DISADV. POPULATION CONCENTRATION 12
6. LABOR FORCE, EMPLOYMENT AND UNEMPLOYMENT 15
7. AREAS OF BELOW AVERAGE LABOR FORCE PARTICIPATION 23
8. INDUSTRY EMPLOYMENT - PY 1989. 30
9. OCCUPATIONAL GROWTH. 46

HIGHLIGHTS

Michigan's 1990 population level based on preliminary census counts was 9,179,661. This represents a decline from the 1980 level.

The state's population developments in terms of age will have significant impact on labor force participation. The state's overall population on average grew older, as the 22-54 age group's proportion increased from 39 to 43 percent of total population.

During the 1980-1989 period, Michigan's labor force grew by 6.8 percent, while employment increased by 13.6 percent.

The state's labor market conditions began to improve after 1982, and by 1989 employment increased by 510,000. Strong employment growth resulted in a significant unemployment rate decline, from a high of 15.5 percent in 1982 to 7.1 percent in 1989.

The prime age female labor force has consistently been the fastest growing labor force group. By 1989, approximately 56.2 percent of the adult female population participated in the labor force.

Those industries which are currently the best targets for employment are furniture manufacturing, printing, plastic products, instruments, wholesale durable and nondurable goods, department stores, other retail trade, finance, insurance and real estate and services.

Wage and salary employment is expected to increase by 61,000 jobs or 1.6 percent between PY 1989 and PY 1991. Total service producing employment is anticipated to grow by 2.6 percent, while goods producing employment will fall by 1.2 percent.

The 446,700 jobs expected to be added to the state's economy between 1988 and 2000 represent a growth rate of 11.0 percent.

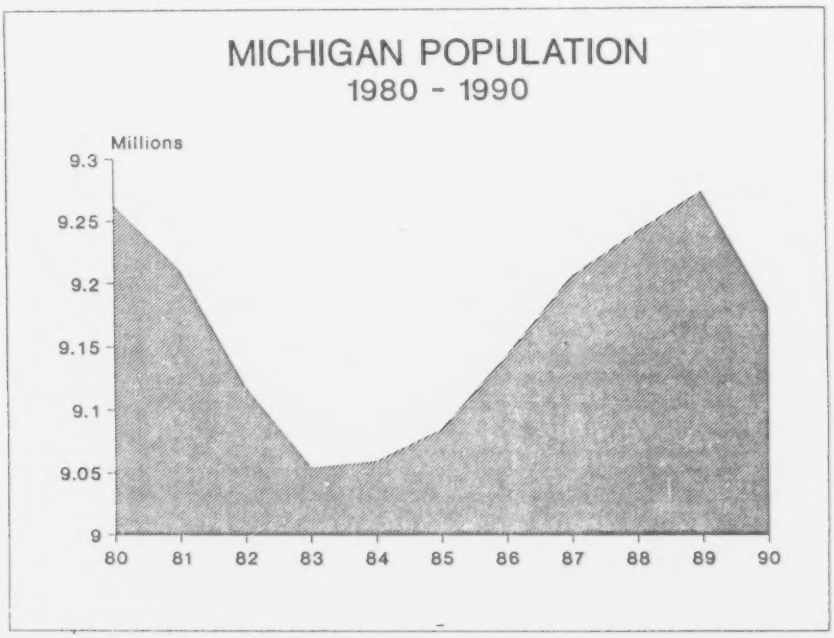
POPULATION

POPULATION TRENDS

Population information is an important indicator of the potential labor force of an area. An area's population changes as migration patterns fluctuate and age cohorts move through time.

Michigan's 1990 population level based on preliminary census counts was 9,179,661. This represents a decline from the 1980 level.

Figure 1



The state's population peaked in 1980 and then experienced significant decline following the 1980 and 1982 recessions. Although some upward movement in population occurred between 1984-1988, the state's overall level declined after 1988 with preliminary 1990 population nearly one percent below the 1980 level.

Contrary to statewide trends, the current population levels for many areas in the state exceed their 1980 levels. This trend is reflected in 15 of the state's 26 service delivery areas. Those areas experiencing growth between 1980-90 are the eastern counties of the upper peninsula; the northern part of the lower peninsula; the west central part of the lower peninsula excluding Saginaw-Midland-Bay and Genesee-Shiawassee; most parts of the southeast lower peninsula excluding Detroit City, Wayne County Balance, Downriver-Monroe and Region II; and most southwest counties of the lower peninsula excluding Berrien-Cass-Van Buren.

The areas reflecting lower than 1980 population levels comprised approximately 47 percent of the state's population. With the exception of the upper peninsula, these areas are all located in the southern lower peninsula (See Figure 2). They tend to be the larger, older, more industrialized urban areas such as Wayne county including Detroit City; Downriver-Monroe; and Genesee county. Collectively, these areas comprise nearly one-third of the state's population.

These areas also reflect continued population decline, while many areas within the state continue to experience overall growth. This may suggest population movement from these areas to other parts of the state. The state's population level will surpass its 1980 level when these areas begin to stabilize and grow and/or the state experiences additional in-migration.

The state's overall population pattern is also characterized by its geographic distribution. Generally, the sparsely populated regions of the state are concentrated in the upper peninsula and in the northern and central regions of the state. Approximately 69 percent of Michigan's population reside in the southern part of the lower peninsula.

Figure 2

AREAS OF POPULATION DECLINE

Note: SDAs located in Inset include City of Detroit, Balance of Wayne County, Monroe - DCC, Pontiac Consortium and Balance of Oakland County

TABLE I.A

1980 - 1990 POPULATION

	1980	1990	Number Change 80/90	Percent Change 80/90
Michigan	9,262,044	9,179,661	- 82,383	- 0.9
Berry-Branch-Calhoun	227,526	224,147	- 3,379	- 1.5
Berrien-Cass Van Buren	287,589	275,620	- 11,969	- 4.2
Lansing Tri-County	419,750	430,470	10,720	2.6
City of Detroit	1,203,369	970,156	-233,213	-19.4
Thumb Area	204,099	203,798	- 301	- 0.2
CAPC	193,928	202,248	8,320	4.3
Region II	283,514	279,617	- 3,897	- 1.4
Kalamazoo-St. Joseph	268,461	279,027	10,566	3.9
Kent County	444,506	497,378	52,872	11.9
Livingston-Washtenaw	365,029	395,180	30,151	8.3
Macomb-St. Clair	833,402	859,993	26,591	3.2
Saginaw-Midland-Bay	421,518	397,757	- 23,761	- 5.6
Downriver-Monroe	512,642	483,790	- 28,852	- 5.6
Oakland County (Balance)	789,560	852,610	63,050	8.0
Muskegon-Oceana	179,591	180,078	487	0.3
Allegan-Ottawa	238,729	275,894	37,165	15.6
Pontiac Area	222,233	223,624	1,391	0.6
Genesee-Shiawassee	521,589	496,350	- 25,239	- 4.8
Wayne County (Balance)	756,491	728,274	- 28,217	- 3.7
Region 7B	119,644	130,565	10,921	9.1
West Central Michigan	124,882	128,867	3,985	3.2
Northeast Michigan	115,779	121,881	6,102	5.3
Northwest Michigan	208,286	230,067	21,781	10.5
Eastern Upper Peninsula	45,866	50,644	4,778	10.4
Central Upper Peninsula	182,390	176,838	- 5,552	- 3.0
Western Upper Peninsula	91,501	84,788	- 6,713	- 7.3

Source: U.S. Bureau of Census
Michigan Department of Management and Budget

Note: Preliminary 1990 Census Data

TABLE I.B

1990 POPULATION DISTRIBUTION

Area	Population Level	Percent
Michigan	9,179,661	100.0
Barry-Branch-Calhoun	224,147	2.4
Berrien-Cass-Van Buren	275,620	3.0
Lansing Tri-County	430,470	4.7
City of Detroit	970,156	10.6
Thumb Area	203,798	2.2
CAPC	202,248	2.2
Region II	279,617	3.1
Kalamazoo-St. Joseph	279,027	3.0
Kent County	497,378	5.4
Livingston-Washtenaw	395,180	4.3
Macomb-St. Clair	859,993	9.3
Saginaw-Midland Bay	397,757	4.3
Downriver-Monroe	483,790	5.3
Oakland County (Balance)	852,610	9.3
Muskegon-Oceana	180,078	2.0
Allegan-Ottawa	275,894	3.0
Pontiac Area	223,624	2.4
Genesee-Shiawassee	496,350	5.4
Wayne County (Balance)	728,274	7.9
Region 7B	130,565	1.4
West Central Michigan	128,867	1.4
Northeast Michigan	121,881	1.3
Northwest Michigan	230,067	2.5
Eastern Upper Peninsula	50,644	0.6
Central Upper Peninsula	176,838	1.9
Western Upper Peninsula	84,788	0.9

Source: U.S. Bureau of the Census
Michigan Department of Management and Budget

Note: Preliminary 1990 Census Data

POPULATION CHARACTERISTICS

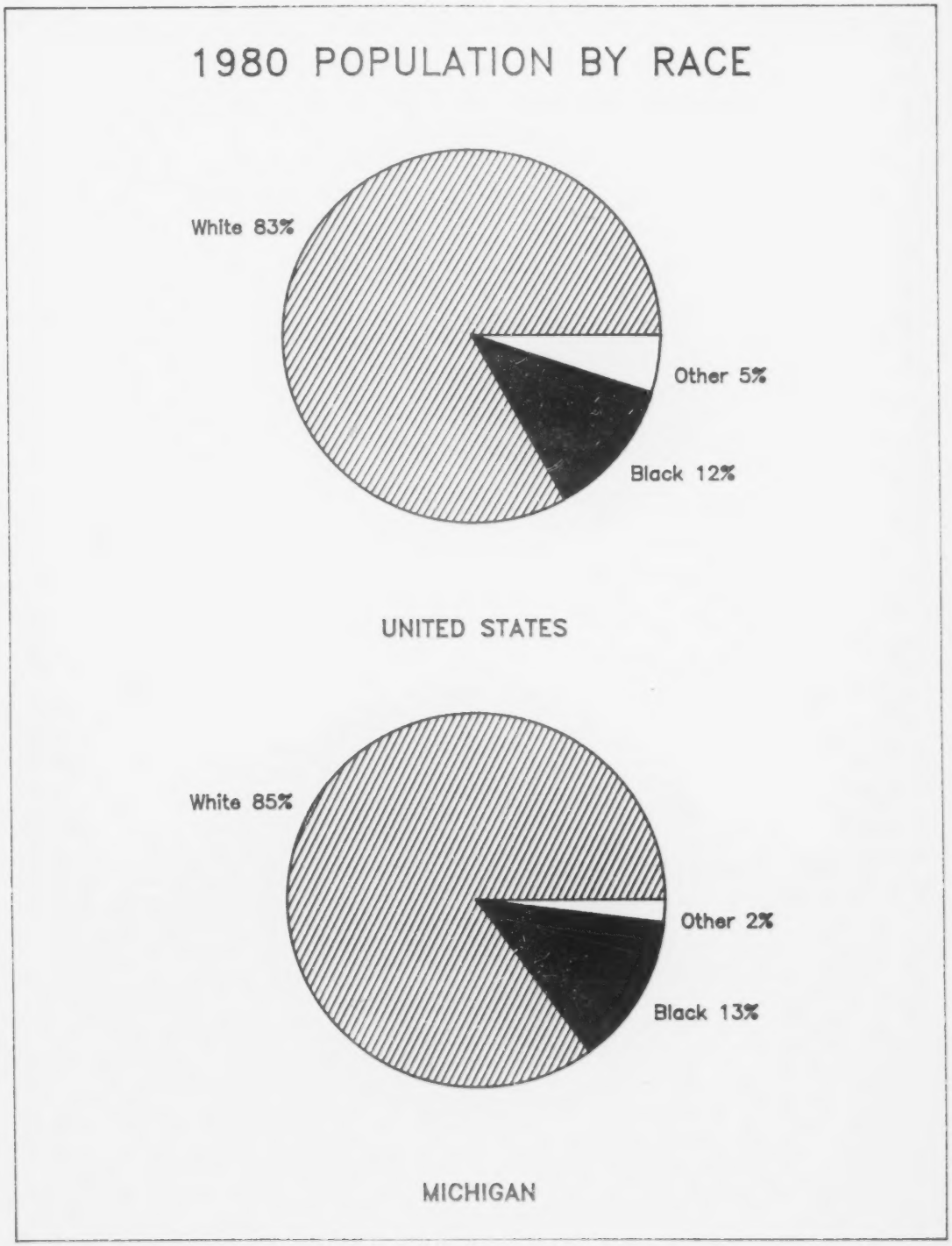
Understanding general population characteristics is essential for human resource planning and development. Characteristics of the general population are a function of the special populations addressed in most human resource programs and, therefore, have important implications for both current and future employment and training policy.

The state's population developments in terms of age will have significant impact on labor force participation. Between 1970 and 1980, the state's overall population on average grew older. During this period, as the birth rate declined, the 1940-50 "baby boom" population reached prime working age. The 22-54 age group's proportion increased from 39 to 43 percent of total population, the 55+ age group increased from 17 to 19 percent and the 16-21 age group increased from approximately 11 to 12 percent.

These developments indicate several things. First, the state is likely to experience a relatively greater amount of job replacement demand due to retirements during the 1980's than any time in the recent past. Secondly, if labor force participation rates remain unchanged, then a declining population in the under 17 age group will mean relatively fewer young labor force entrants. This may possibly result in labor shortages for certain occupations traditionally staffed by new entrants. The population age developments also indicate greater labor force growth in the 22-54 age cohort, primarily due to increased female participation as well as aging of the baby boom population.

Michigan's racial makeup includes a slightly higher proportion of whites and blacks than nationwide while other minority races are less represented. Michigan's 1980 racial distribution was 85.2 percent white, 12.9 percent black and 1.9 percent other races, compared to the national distribution of 83 percent white, 12 percent black and 5 percent other races. The state's hispanic population, at almost 2 percent of total, is significantly less well represented than it is nationally, at 6.4 percent.

FIGURE 3


1980 POPULATION BY RACE
White 83%
Other 5%
Black 12%
UNITED STATES
White 85%
Other 2%
Black 13%
MICHIGAN

ECONOMICALLY DISADVANTAGED POPULATION

An economically disadvantaged person is an individual who receives welfare, or has an income below the current poverty level, or receives food stamps, or is a handicapped adult whose own income is below poverty. Reasons for poverty vary throughout the state. Some reasons may include inadequate education, inadequate job skills, poor labor market conditions, an inadequate labor exchange system, poor job access, etc. The economically disadvantaged is a primary target population for various types of employment, training and other social service programs. Relevant data are essential for the planning and development of programs which effectively address the needs of the target population.

In the following table, data from the 1980 census show family poverty by race and ethnic characteristics and indicate a relatively greater incidence of poverty among black, native american and hispanic families. Approximately 8.2 percent of all families have income below the poverty level. The most significant characteristic of these families is that more than half of them are headed by females.

TABLE I.C
MICHIGAN FAMILIES
BELOW POVERTY
1980

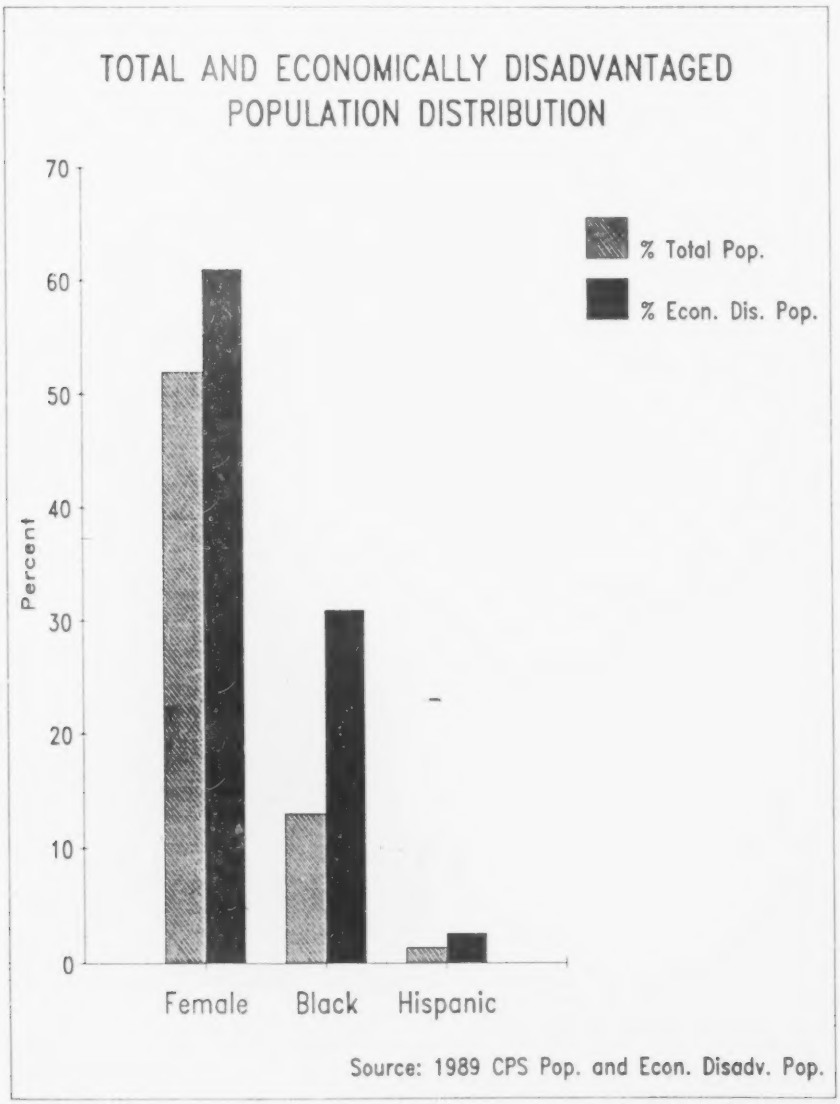
	Families Below Poverty	Percent All Families	Percent Female No Husband Present
Total	198,391	8.2	54.5
White	124,306	6.0	43.5
Black	65,015	23.4	76.2
Native American	1,927	19.4	56.7
Asian & Pacific Islander	1,313	10.5	21.9
Other	116	12.5	29.3
Hispanic	5,714	17.0	54.0

SOURCE: 1980 Census

NOTE: Racial groups are non-hispanic

The MESC, Bureau of Research and Statistics prepares estimates of the economically disadvantaged population for the state and its 26 service delivery areas. The latest estimate for 1989 indicate 1,130,113 or one out of every nine persons in the state is economically disadvantaged. The data also reflect a greater incidence of disadvantaged among females and minorities. This is illustrated in Figure 4 which compares percent distribution of selected groups in total population to their distribution in the economically disadvantaged population.

Figure 4



Another observation that can be made is the geographic distribution of the economically disadvantaged population and its proportion of total population in the area. The following map and table illustrate area ratios of the economically disadvantaged to total population. Nine of the service delivery areas have higher concentrations of economically disadvantaged than the statewide average. These areas include the upper peninsula excluding the eastern upper peninsula, the northern part of the lower peninsula, most of the central parts of Michigan, the southwestern tip of Michigan and the city of Detroit. The city of Detroit is the state's largest service delivery area and has the highest ratio of poor with one in every three persons economically disadvantaged.

TABLE I.D
TOTAL AND ECONOMICALLY DISADVANTAGED POPULATION
FOR MICHIGAN AND SERVICE DELIVERY AREAS
1989

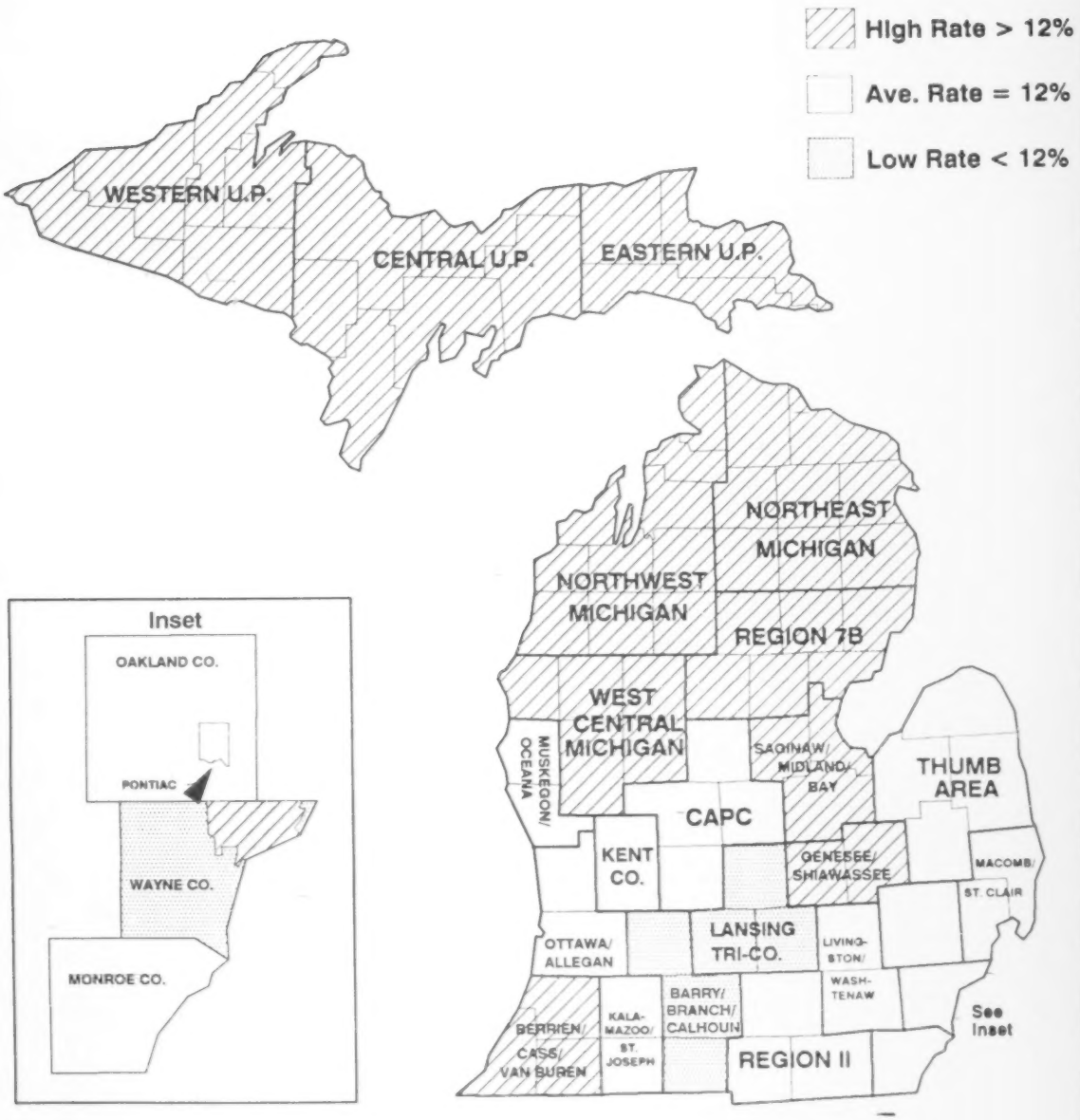
Area	Total Population 1990	Econ. Disad. Population 1989	Percent ED/Total
Michigan	9,179,661	1,130,113	12
Barry-Branch-Calhoun	224,147	27,003	12
Berrien-Cass-Van Buren	275,620	42,136	15
Lansing Tri-County	430,470	52,274	12
City of Detroit	970,156	301,011	31
Thumb Area	203,798	24,300	12
CAPC	202,248	23,350	12
Region II	279,617	29,422	11
Kalamazoo-St. Joseph	279,027	31,612	11
Kent County	497,378	43,874	9
Livingston-Washtenaw	395,180	40,428	10
Macomb-St. Clair	859,993	60,714	7
Saginaw-Midland Bay	397,757	53,961	14
Downriver-Monroe	483,790	42,081	9
Oakland County (Balance)	852,610	43,470	5
Muskegon-Oceana	180,078	26,094	14
Allegan-Ottawa	275,894	20,590	7
Pontiac Area	223,624	23,338	10
Genesee-Shiawassee	496,350	60,698	12
Wayne County (Balance)	728,274	57,824	8
Region 7B	130,565	19,229	15
West Central Michigan	128,867	19,141	15
Northeast Michigan	121,881	17,302	14
Northwest Michigan	230,067	26,771	12
Eastern Upper Peninsula	50,644	6,320	12
Central Upper Peninsula	176,838	23,979	14
Western Upper Peninsula	84,788	13,191	16

Source: U.S. Bureau of the Census
Michigan Department of Management and Budget

Note: Preliminary 1990 Census Data

Figure 5

ECONOMICALLY DISADVANTAGED POPULATION CONCENTRATION



Note: SDAs located in Inset include City of Detroit, Balance of Wayne County, Monroe - DCC, Pontiac Consortium and Balance of Oakland County

LABOR FORCE

LABOR FORCE TRENDS

Changes in the size of the civilian labor force and its component parts of employed and unemployed follow trends in population and economic development. Labor force information can be used by human resource planners to guage the number of individuals experiencing unemployment problems and to increase the responsiveness of training programs to changing conditions and contribute to the attainment of social and economic goals of the local area and the state.

The state's labor market continues a slowdown in growth that began in the early 1980's. The largest labor force growth, 10.3 percent, occurred over the 1975-80 period. During the 1980-89 period, the labor force grew by only 6.8 percent. This reduced growth can be attributed to the 1980-82 recession which severely affected labor market conditions in Michigan. The state's labor market conditions began to improve after 1982 and by 1989 employment had increased by 510,000. Strong employment growth resulted in a significant unemployment rate decline, from a high of 15.5 percent in 1982 to 7.1 percent in 1989.

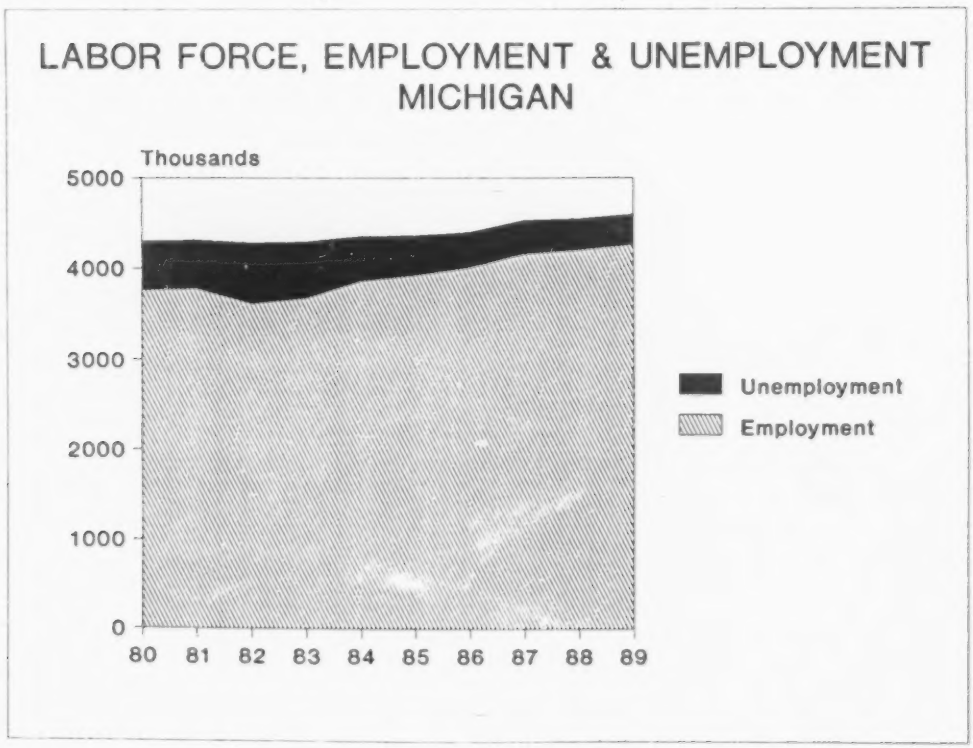


TABLE II.A
LABOR FORCE CHARACTERISTICS
1980 AND 1989
MICHIGAN

(Data in Thousands)

	1980	1989	Number Change	Percent Change
Total 16+				
Population	6,799	6,985	186	4.9
Labor Force	4,298	4,592	294	6.4
LF Participation Rate	63.2	65.7	2.5	XXX
Employment	3,757	4,267	510	13.6
Unemployment	541	326	-215	-39.7
Rate (percent)	12.6	7.1	-5.5	XXX
Men 20+				
Population	2,917	3,017	100	3.4
Labor Force	2,291	2,360	69	3.0
LF Participation Rate	78.6	76.9	-1.7	XXX
Employment	2,005	2,210	205	10.2
Unemployment	286	150	-136	-47.6
Rate (percent)	12.5	6.4	-6.1	XXX
Women 20+				
Population	3,163	3,318	155	4.9
Labor Force	1,572	1,867	295	18.8
LF Participation Rate	49.7	56.2	6.5	XXX
Employment	1,408	1,752	344	24.4
Unemployment	164	114	- 50	-30.5
Rate (percent)	10.4	6.1	-4.3	XXX
Youth 16-19				
Population	720	596	-124	-17.2
Labor Force	435	366	- 69	-15.9
LF Participation Rate	60.4	61.3	0.9	XXX
Employment	344	304	- 40	-11.6
Unemployment	91	61	- 30	- 33.0
Rate (percent)	20.9	16.8	-4.1	XXX

TABLE II.A (Continued)
LABOR FORCE CHARACTERISTICS
1980 AND 1989
MICHIGAN

(Data in Thousands)

	1980	1989	Number Change	Percent Change
Seniors 55+				
Population	1,772	1,797	25	1.4
Labor Force	537	490	- 47	- 8.8
LF Participation Rate	30.3	27.3	-3.0	XXX
Employment	514	469	- 45	- 8.8
Unemployment	23	20	- 3	- 13.0
Rate (percent)	4.3	4.1	-0.2	XXX
White 20+				
Population	5,304	5,464	160	3.0
Labor Force	3,397	3,689	292	8.6
LF Participation Rate	64.0	67.5	3.5	XXX
Employment	3,048	3,501	453	14.9
Unemployment	349	188	-161	- 46.1
Rate (percent)	10.3	5.1	-5.2	XXX
Nonwhite 20+				
Population	776	925	149	19.2
Labor Force	467	538	71	15.2
LF Participation Rate	60.4	58.2	2.2	XXX
Employment	365	462	97	26.6
Unemployment	102	76	- 26	- 25.5
Rate (percent)	21.8	14.1	7.7	XXX

SOURCE: Current Population Survey - Michigan
Bureau of Research and Statistics

LABOR FORCE CHARACTERISTICS

Changes in the labor force reflect changes in population composition as well as changes in labor force participation patterns. Several major trends in population demographics will be reflected in the state's labor force. The demographic distribution of the labor force will generally become older with more women, black and hispanic participants. Overall men will experience a decline in their representation in the work force, while women are expected to post increases, but at a declining rate. Non-hispanic white males will post significant declines based on a drop in the number of young white males born during 1965-1978, and also as a result of continuing decreases in the labor force participation rates of older white males. In terms of age, the share of the workforce aged 16 to 34 and 55 years and older is projected to decline while 35 to 54 year olds are expected to increase. The following brief discussion of major groups reflect the variance of labor force trends by age, sex and race.

Women

The prime age female labor force has consistently been the fastest growing group. In Michigan, over the 1980-1989 period, the adult female labor force participation rate increased by more than six points, as their labor force ranks swelled by approximately 295,000. By 1989, over 56 percent of the adult female population participated in the labor force. During the 1980-89 period, labor market conditions for women improved as employment increased by 344,000, causing the unemployment rate to fall by 4.3 points to 6.1 percent in 1989.

Youth

In Michigan, the teenage labor force began to decline in 1980. During the 1980-89 period, the state's teenage labor force dropped by nearly 16 percent, the largest decline of any labor force group. Historically, teenagers have faced considerable competition for jobs, however, with their numbers falling, there should be relatively less competition. Another effect of a smaller teenage labor force is possible labor shortage for some employers of younger workers. However, some employers are responding to this shortage by hiring a different age mix of employees or by offering higher wages to continue attracting teenage employees. Labor market conditions overall have not improved for teenage workers. During the 1980-89 period, employment declined by 40,000 as double-digit unemployment rates continued. In 1989, youth unemployment average 16.8 percent.

Seniors 55+

The older labor force (55 years and over) began to contract in the 1980's and is expected to continue declining. During the 1980-89 period, the senior labor force declined by nearly 9 percent. As more people are covered by pension plans, labor force participation of older workers can be expected to drop. The seniors were one of two labor force groups (the other was teenagers) experiencing declines over the 1980-89 period. Labor market conditions for the senior labor force have remained fairly stable. This group generally experiences one of the lowest unemployment rates of any labor force group. During 1989, the senior labor force unemployment rate averaged 4.1 percent.

Nonwhite

The nonwhite labor force continued to grow faster than the white labor force over the 1980-89 period. The nonwhite labor force expanded by 15.2 percent compared to 8.6 percent for white. In 1989, the nonwhite labor force comprised 11.7 percent of the state's total labor force. During the 1980-89 period, labor market conditions for the nonwhite group were somewhat improved as their unemployment rate declined nearly eight points to 14.1 percent in 1989. However, this group continues to experience sharply higher relative rates of unemployment. Estimated nonwhite unemployment rates ranged from two to three times those for whites during the 1980-89 period.

TABLE II.B
LABOR FORCE ADJUSTED
ECONOMICALLY DISADVANTAGED
MICHIGAN
1989

	Number	Percent Distribution
TOTAL 16+	671,492	100.0
Male	301,104	44.8
Female	370,388	55.2
AGE GROUP		
16-19	73,910	11.0
20-21	55,775	8.3
22-54	483,574	72.0
55-64	49,456	7.4
65 +	8,777	1.3
RACE/ETHNIC		
White	464,166	69.1
Black	177,235	26.4
Am. Indian	7,167	1.1
Asian /Pacific Island	4,845	0.7
Hispanic	18,079	2.7

SOURCE: Michigan Employment Security Commission

ECONOMICALLY DISADVANTAGED - LABOR FORCE ADJUSTED

The following tables provide information on the economically disadvantaged population adjusted for potential labor force participation. The labor force adjusted concept assumes similar labor force participation of the economically disadvantaged population as the general population. It is an important planning guide since the labor force rather than the population more closely reflects the disadvantaged who are more likely to be active in the job market and, therefore, to avail themselves of JTPA services.

The demographic characteristics of the labor force economically disadvantaged are similar to the demographics reflected in other poverty-related data discussed earlier. When compared to the general population profile, there is a greater representation specifically of females and minorities among the poor. The Michigan 1989 estimate of labor force adjusted economically disadvantaged reflects 55 percent female and over 26 percent black compared to general labor force population of 44 percent female and 11 percent black.

Table II.C provides comparison of economically disadvantaged labor force and population for the state and SDAs. Basically, this reflects labor force participation among the areas. Participation ranges from a low of 49 percent to a high of 71 percent. There exists a variety of barriers to labor force participation. Some include inadequate education, skills; poor economic conditions; poor labor exchange system; poor public transportation system; etc.

Generally those areas that have relatively low labor force participation rates are areas which experience a variety of barriers to a significant degree. Usually the problems will include poor economic conditions, dependency on one or two highly seasonal or cyclical industry sectors, poor economic development, and an ineffective education and training system. Figure 7 illustrates eleven areas with rates lower than the statewide average of 59 percent. These areas are located for the most part in the upper peninsula, the northeast part of the lower peninsula and the southeast and west portion of the lower peninsula.

In contrast, the two highest labor force participation areas, Livingston-Washtenaw and Lansing Tri-County, have experienced very positive population, labor force and employment trends. These areas are generally characterized by a strong local economy, strong economic development, well diversified industry employment base, and an effective education and training network. If an area is to experience some degree of economic well-being, then these crucial areas of activity must be well coordinated and integrated to achieve optimal benefits.

TABLE II.C
ECONOMICALLY DISADVANTAGED
POPULATION AND LABOR FORCE
1989

	Economically Disadvantaged		Percent Econ.Disadv. LF/POP.
	Labor Force	Population	
Michigan	671,492	1,130,113	59
Barry-Branch-Calhoun	16,966	27,003	63
Berrien-Cass-Van Buren	23,699	42,136	56
Lansing Tri-County	37,129	52,274	71
City of Detroit	158,622	301,011	53
Thumb Area	14,374	24,300	59
CAPC	14,887	23,350	64
Region II	17,760	29,422	60
Kalamazoo-St. Joseph	21,442	31,612	68
Kent County	28,505	43,874	65
Livingston-Washtenaw	28,391	40,428	70
Macomb-St. Clair	37,594	60,714	62
Saginaw-Midland-Bay	31,459	53,961	58
Downriver-Monroe	25,375	42,081	60
Oakland County (Bal.)	27,714	43,470	64
Muskegon-Oceana	15,102	26,094	58
Allegan-Ottawa	13,334	20,590	65
Pontiac Area	14,938	23,338	64
Genesee-Shiawassee	35,634	60,698	59
Wayne County (Balance)	34,069	57,824	59
Region 7B	9,402	19,229	49
West Central Michigan	10,549	19,141	55
Northeast Michigan	9,512	17,302	55
Northwest Michigan	15,608	26,771	58
Eastern Upper Peninsula	3,558	6,320	56
Central Upper Peninsula	13,433	23,979	56
Western Upper Peninsula	6,884	13,191	52

SOURCE: MESC
Bureau of Research and Statistics

FIGURE 7

AREAS OF BELOW AVERAGE LABOR FORCE PARTICIPATION

Note: SDAs located in Inset include City of Detroit, Balance of Wayne County, Monroe - DCC, Pontiac Consortium and Balance of Oakland County

LABOR FORCE PROJECTIONS - STATEWIDE

Labor market conditions are projected to worsen and then moderate somewhat through program year 1991. During PY 1990, sluggish employment growth is expected. Sluggish growth will result from declines in the goods-producing section specifically construction and motor vehicles. This decline will be offset by some employment expansion in the service producing sector. During this period, labor force expansion is projected to outpace employment growth and result in higher unemployment. The unemployment rate is expected to climb from 7.5 percent in PY 1989 to 7.9 percent in PY 1990.

Labor market conditions should moderate during PY 1991, with stronger employment growth expected. Statewide employment should average 4,322,000 in PY 1991 which represents an increase of 61,000 from the previous year. Unemployment is expected to decline slightly by 7,000 and average 358,000 for the period. This will cause a drop in the unemployment rate from 7.9 in PY 1990 to 7.7 in PY 1991.

TABLE II.D
LABOR FORCE PROJECTIONS
MICHIGAN

(Data in Thousands)

	PY 1989 7/89-6/90	PY 1990 7/90-6/91	PY 1991 7/91-6/92
Labor Force	4,604	4,626	4,680
Employment	4,258	4,261	4,322
Unemployment	346	365	358
Rate (percent)	7.5	7.9	7.7

SOURCE: Michigan Employment Security Commission

LABOR FORCE PROJECTIONS - REGIONAL

Table II.E provides PY 1989 thru PY 1991 unemployment rates for the state and SDAs. Generally, the PY 1991 area rates are projected to range from a low of 5.5 percent for Livingston-Washtenaw and Oakland County to a high of 11.4 percent for the City of Detroit SDA. Six SDAs are expected to experience double-digit unemployment. These include Genesee-Shiawassee, Detroit City, Eastern Upper Peninsula, Northeast Michigan, CAPC, and the Thumb Area. Labor market conditions in most of these areas continue to be more heavily impacted by plant closings, slow economic development and industry diversification and in some cases inadequate human resource development.

TABLE II.E
UNEMPLOYMENT RATE PROJECTIONS
MICHIGAN AND SDAS
PY 1989 - PY 1991

	PY 1989	PY 1990	PY 1991
Michigan	7.5	7.9	7.7
Barry-Branch-Calhoun	7.9	8.0	8.0
Berrien-Cass-Van Buren	8.0	8.0	8.3
Lansing Tri-County	6.2	7.3	7.1
City of Detroit	11.0	11.8	11.4
Thumb Area	10.1	10.6	10.0
CAPC	9.1	11.2	10.8
Region II	7.7	7.9	7.7
Kalamazoo-St. Joseph	5.9	6.2	6.3
Kent County	5.9	6.7	6.0
Livingston-Washtenaw	4.7	5.8	5.5
Macomb-St. Clair	7.5	8.1	7.8
Saginaw-Midland-Bay	7.7	8.0	7.5
Downriver-Monroe	7.2	7.7	7.4
Oakland County (Balance)	5.2	5.8	5.5
Muskegon-Oceana	9.4	10.0	9.3
Allegan-Ottawa	5.7	6.2	5.8
Pontiac Area	8.3	9.2	8.8
Genesee-Shiawassee	10.5	11.0	10.3
Wayne County (Balance)	5.6	6.1	5.8
Region 7B	9.3	10.3	9.9
West Central Michigan	9.0	9.9	8.8
Northeast Michigan	10.5	10.7	10.2
Northwest Michigan	9.1	9.2	8.8
Eastern Upper Peninsula	11.8	11.6	10.3
Central Upper Peninsula	7.4	8.2	7.2
Western Upper Peninsula	7.5	7.9	7.2

SOURCE: MESC
Bureau of Research and Statistics

INDUSTRY EMPLOYMENT

PLANNING APPLICATIONS

Knowledge of the structure and trends of employment by industry in Michigan is vital to program planners for several reasons. The number of jobs supplied by private and public employers in the state during 1989 totalled nearly 3.9 million, or over 90 percent of total state employment. A detailed breakdown of these jobs gives a planner a basic understanding of the state's economy, and answers a variety of questions, such as:

- What are the state's base industries?
- Which industries employ the most workers?
- Which industries are recording the fastest job growth?
- What proportion of industry jobs are supplied by small and large firms?
- How do wages differ among industrial categories?

From the broadest perspective, such as the impact of projected national economic development on industry employment in Michigan, to narrow and specific planning information, such as the projected rate of job growth in the various regions of Michigan, industry employment information is of value to anyone in the business or employment and training community.

INDUSTRY STRUCTURE

The manufacturing sector has historically been the major source of industry employment in Michigan. During 1978, nearly a third of industry jobs were in manufacturing. With over 400,000 jobs in motor vehicle manufacturing, Michigan supplied over 40 percent of auto jobs nationwide. The motor vehicle, machinery, and metals industries provided 859,000 jobs in Michigan during 1978, or nearly two-thirds of total manufacturing employment. The well-documented events of the last decade, with plant closings and mass layoffs in these industries due to the impact of a national recession, foreign competition, outmoded manufacturing facilities, and the reduced labor requirements of modern production facilities, combined to slash employment in these industries and throughout the manufacturing sector.

By PY 1989, these developments had sharply reduced manufacturing jobs to less than one-quarter of Michigan industry employment with job losses in virtually every industry. As Figure 8 illustrates, however, this proportion is still well above the national average. Despite the loss of 212,000 manufacturing jobs since 1978, manufacturing remained the largest industry employer in Michigan during PY 1989. Nationally, the service and retail industries supply more jobs than manufacturing. The proportion of jobs among all other major industry groups in Michigan was below the national average in PY 1989 with the exception of the retail sector.

The state's increase in reliance on the diverse service sector for employment has been substantial, as service jobs comprised 23 percent of industry employment in PY 1989, up from only 17 percent in 1978. The shifts in industry structure since 1978 resulted in major numbers of dislocated and underemployed workers statewide, but total state employment is now somewhat less vulnerable to the national business cycle or to production fluctuations in the auto industry.

Figure 8

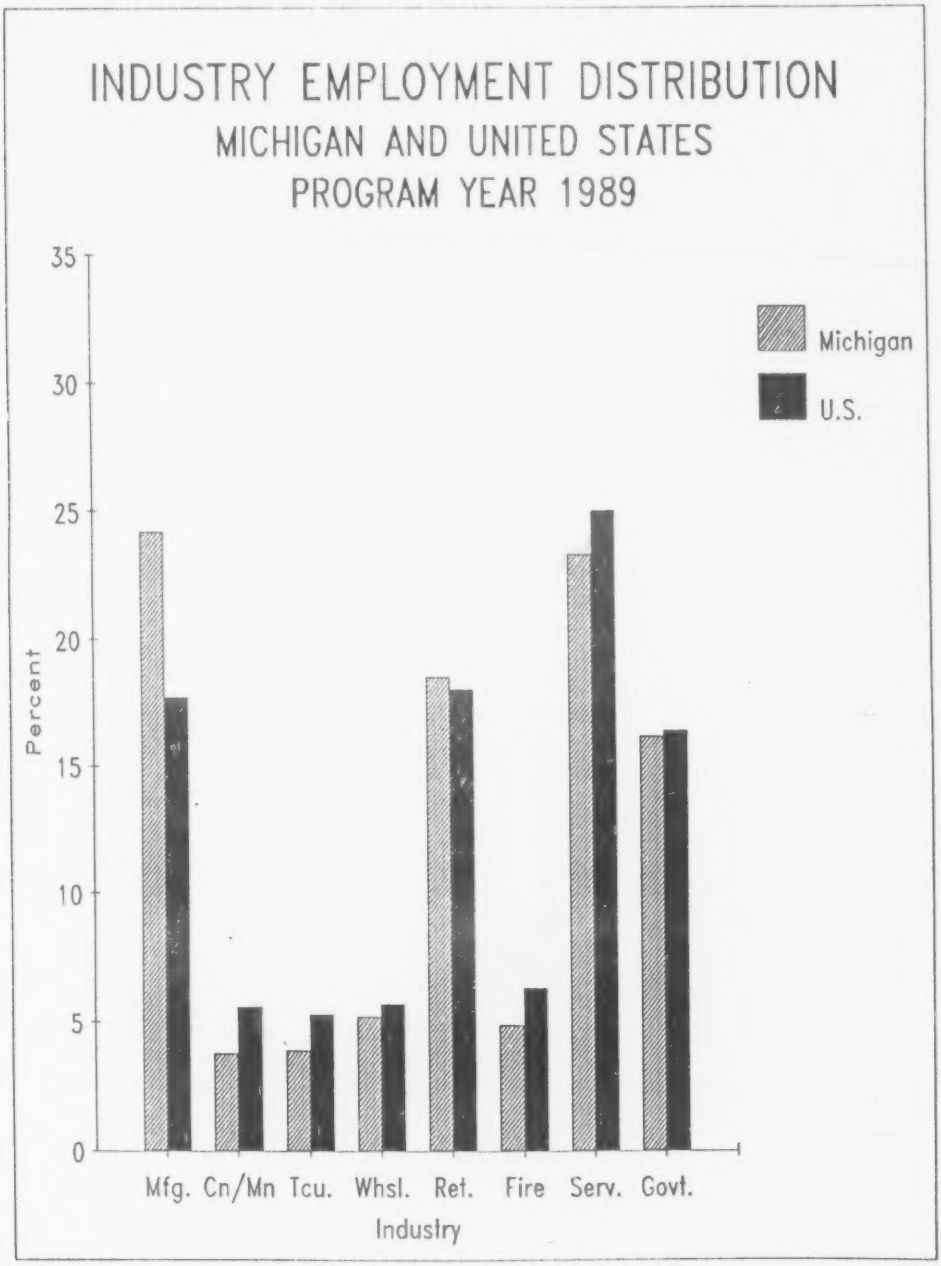


TABLE III.A
PRIVATE INDUSTRY EMPLOYMENT ANALYSIS
STATE OF MICHIGAN
1989

SIC	INDUSTRY TITLE	3RD QUARTER EMPLOYMENT NUMBER	PERCENT OF TOTAL
	Total	3,317,257	100.0
01	Agriculture-Crops	16,487	0.5
02	Agriculture-Livestock	1,557	0.0
07	Agriculture Services	20,140	0.6
08	Forestry	803	0.0
09	Fisheries	P	P
10	Metal Mining	3,465	0.1
13	Crude Petroleum and Nat. Gas	4,029	0.1
14	Nonmetallic Mining, Quarrying	3,166	0.1
15	General Building Contractors	36,191	1.1
16	General Contractors, Exc. Bldg.	15,125	0.5
17	Special Trade Contractors	101,146	3.0
20	Food and Kindred Products	47,998	1.4
21	Tobacco Manufacturing	P	P
22	Textile Mill Products	1,329	0.0
23	Apparel, Textile Products	20,800	0.6
24	Lumber and Wood Products	15,841	0.5
25	Furniture and Fixtures	34,869	1.1
26	Paper and Allied Products	21,112	0.6
27	Printing and Publishing	44,467	1.3
28	Chemical and Allied Products	44,804	1.4
29	Petroleum and Coal Products	2,435	0.1
30	Rubber, Misc. Plastic Products	52,991	1.6
31	Leather Products	2,703	0.1
32	Stone, Clay, Glass Products	18,163	0.5
33	Primary Metal Products	44,429	1.3
34	Fabricated Metal Products	123,316	3.7
35	Machinery, Nonelectrical	128,855	3.9
36	Electrical Machinery	34,435	1.0
37	Transportation Equipment	298,824	9.0
38	Measuring and Controlling Instr.	17,607	0.5
39	Miscellaneous Manufacturing	7,411	0.2
40	Railroads, Railway Express	P	P
41	Local Interurban Transit	5,674	0.2
42	Trucking and Warehousing	46,387	1.4
44	Water Transportation	2,350	0.1
45	Air Transportation	16,519	0.5

TABLE III.A (Continued)
PRIVATE INDUSTRY EMPLOYMENT ANALYSIS
STATE OF MICHIGAN
1989

SIC	INDUSTRY TITLE	3RD QUARTER EMPLOYMENT NUMBER	3RD QUARTER EMPLOYMENT PERCENT OF TOTAL
46	Pipelines	P	P
47	Transportation Services	9,837	0.3
48	Communications	34,188	1.0
49	Utilities, Sanitary Services	33,389	1.0
50	Wholesale Trade-Durables	130,652	3.9
51	Wholesale Trade-Nondurables	74,391	2.2
52	Building Materials	31,947	1.0
53	General Merchandise, Total	112,440	3.4
54	Food and Dairy Stores	104,807	3.2
55	Auto Dealers, Gas Stations	80,337	2.4
56	Apparel and Accessories	41,060	1.2
57	Furniture	28,334	0.9
58	Eating and Drinking Places	256,754	7.7
59	Misc. Retail Trade Stores	83,744	2.5
60	Banking	74,623	2.2
61	Credit Agencies	10,152	0.3
62	Security and Commodity Brokers	5,993	0.2
63	Insurance	40,961	1.2
64	Insurance Agents and Brokers	18,922	0.6
65	Real Estate	33,076	1.0
67	Holding and Other Investment Off.	4,267	0.1
70	Hotels and Lodging Places	37,626	1.1
72	Other Personal Services, Total	37,414	1.1
73	Business Services	175,533	5.3
75	Automobile Repair Services	31,023	0.9
76	Other Repair Services	14,771	0.4
78	Motion Pictures, Theaters	9,912	0.3
79	Miscellaneous Entertainment	37,402	1.1
80	Medical, Other Health	297,707	9.0
81	Legal Services	25,390	0.8
82	Education Services	23,008	0.7
83	Social Services	57,822	1.7
84	Museums, Art Galleries, Zoos	1,830	0.1
86	Nonprofit Organizations	36,237	1.1
87	Engrg, Accts, Rsrch, Mgmt & Rel.	80,649	2.4
88	Private Households	3,668	0.1
89	Other Prof, Related Services	1,386	0.0

P - Protected Information

Source: Michigan Employment Security Commission
Bureau of Research and Statistics - ES-202

Table III.B lists the top ten private industry employers during the third quarter 1989. Transportation equipment has been the top industry employer in Michigan for about 70 years, but that will end in 1990, when health services will employ the most Michigan workers. Transportation equipment, health services, and eating and drinking places supplied one of every four private industry jobs during PY 1989. The ten largest state industries are distributed among industry divisions, with four in trade, three in manufacturing, two providing services, and one in construction.

TABLE III.B
TOP TEN
PRIVATE INDUSTRY EMPLOYERS
MICHIGAN
1989

SIC	INDUSTRY TITLE	3RD QUARTER EMPLOYMENT NUMBER	PERCENT OF TOTAL
	Statewide Total	3,317,257	100.0
37	Transportation Equipment	298,824	9.0
80	Medical, Other Health Services	297,707	9.0
58	Eating and Drinking Places	256,754	7.7
73	Business Services	175,533	5.3
50	Wholesale Trade-Durables	130,652	3.9
35	Nonelectrical Machinery	128,855	3.9
34	Fabricated Metal Products	123,316	3.7
53	General Merchandise Stores	112,440	3.4
54	Food and Dairy Stores	104,807	3.2
17	Special Trade Contractors	101,146	3.0

Source: Michigan Employment Security Commission
Bureau of Research and Statistics - ES-202

Table III.C illustrates the proportion of employment by area supplied by the manufacturing sector. The highest proportion of jobs in manufacturing are found in southern and central Michigan while the northern SDAs have substantially lower proportions of factory jobs. As Table III.C illustrates, the range of jobs provided by the manufacturing sector is substantial, from a high of 42 percent in the Ottawa-Allegan SDA to only 7 percent in the Eastern Upper Peninsula.

Although a high proportion of manufacturing jobs generally indicates a vulnerability to downturns in the national or state economy, four of the six SDAs in Michigan with the lowest jobless rates had a higher than average proportion of manufacturing jobs. Kalamazoo-St. Joseph, Balance of Wayne County, Kent County, and Ottawa-Allegan had low PY 1988 jobless rates of approximately 6 percent due in part to a strong manufacturing base as well as job growth in the service-producing sector. Those SDAs with high unemployment rates and a greater than average share of manufacturing jobs, such as the Flint, Detroit City, Muskegon, Pontiac, and Thumb Area SDAs, tend to be more reliant on manufacturing industries which have experienced structural declines in employment, and have a low concentration of jobs in high growth industries. These areas are also characterized by chronic unemployment and relatively low levels of educational attainment as reflected in their higher than average high school dropout rates.

Differences are also apparent among SDAs with a lower than average share of jobs from manufacturing. Most are non-metropolitan SDAs characterized by lower than average wage levels and high seasonal unemployment. In contrast, the Livingston-Washtenaw, Balance of Oakland County, and Lansing SDAs have a lower than average share of manufacturing jobs due to rapidly growing service sectors and substantial government employment. These three areas are characterized by higher than average wage levels and educational attainment, and low rates of unemployment.

TABLE III.C
MANUFACTURING SECTOR
PROPORTION OF TOTAL JOBS
MICHIGAN AND SDA's

AREA	PERCENT
Ottawa-Allegan	42
Macomb-St. Clair	37
Berrien-Cass-Van Buren	31
Kalamazoo-St. Joseph	30
Region II	30
Genesee-Shiawassee	30
Muskegon-Oceana	28
Saginaw-Bay-Midland	27
Kent County	27
Thumb Area	29
Barry-Branch-Calhoun	28
Wayne County	24
Monroe County	26
MICHIGAN	24
West Central	24
CAPC	22
Livingston-Washtenaw	22
Northwest Michigan	19
Oakland County	18
Central UP	17
Northeast Michigan	17
Region 7B	15
Lansing	15
Western UP	12
Eastern UP	7

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

INDUSTRY EMPLOYMENT BY SIZE OF FIRM

Just as the levels of employment vary by industry, significant differences also exist among industries in the proportion of jobs supplied by firm size. These differences have clear indications for human research strategies as small and large firms tend to have differing labor requirements, hiring patterns, occupational staffing and wage rates. As Table III.D demonstrates, small firms are the primary employers of construction workers, as roughly 70 percent of construction jobs in Michigan during the third quarter 1989 were among firms with under twenty employees. In the manufacturing and transportation, communication and utilities sectors, however, very large firms provide the most jobs. Just under half of manufacturing employment and thirty-seven percent of transportation, communication, and utilities jobs were supplied by firms with 500 or more workers. The fastest growing industry sector in Michigan, services, has an extremely balanced distribution of employment by firm size. About the same proportion of service jobs is contributed by firms with fewer than 20, 20-99, 100-499, and over 500 employees.

TABLE III.D
EMPLOYMENT DISTRIBUTION BY FIRM SIZE & INDUSTRY
MICHIGAN
3RD QUARTER - 1989

Size Class	All Indus.	Const.	Manuf.	TCU	Trade	Fire	Serv.
1-9	11.5	28.7	2.6	7.4	13.3	12.6	16.2
10-19	8.9	19.0	3.8	7.0	11.7	7.3	10.0
20-49	13.8	21.6	8.9	12.2	18.7	11.6	12.8
50-99	11.7	13.7	9.2	11.6	15.5	10.3	10.2
100-249	14.7	12.0	15.1	14.7	14.0	16.3	15.1
250-499	10.0	3.8	12.1	10.0	9.1	11.9	9.4
500-999	8.7	1.2*	10.4	10.8	9.2	8.3	7.8
1000+	20.7	NA	37.9	26.2	8.4	21.8	18.5

*Includes all firms with employment of 500 and over.

The current structure of jobs by size of firm differs markedly from the employment structure of the late 1970's. Over the last decade, state job growth was concentrated among firms with fewer than 500 workers. This was particularly evident within manufacturing, where sharp job losses occurred among establishments with over 500 employees. The share of manufacturing jobs from these large firms fell from 62 percent in 1978 to 48 percent in 1989. As Michigan's employment structure has been downsized, it now more closely resembles the national structure of jobs by size of firm.

TABLE III.E
AREA INDUSTRY EMPLOYMENT TRENDS
MICHIGAN

(Data in Thousands)

Industry Name	SIC	1978	PY 1982	PY 1986	PY 1988	PY 1989
Mining	10-14	13.3	9.0	9.4	10.7	10.6
Construction	15-17	138.8	86.7	118.3	135.3	138.3
Food Products	20	52.4	45.5	45.4	45.5	45.9
Textile Products	22-23	27.7	17.8	22.8	22.6	22.3
Lumber/Wood Products	24	14.4	10.1	13.6	15.9	15.6
Furniture	25	21.5	21.2	29.7	35.1	35.4
Paper	26	23.7	20.1	20.9	20.9	20.8
Printing	27	33.6	33.1	39.0	43.7	44.9
Chemicals	28	45.9	40.3	40.0	43.8	45.0
Refining	29	2.7	3.2	2.4	2.1	2.0
Rubber/Plastics	30	37.2	28.5	45.6	53.2	51.5
Leather	31	3.6	2.9	2.3	2.6	2.8
Stone/Clay/Glass	32	21.9	15.0	17.7	17.2	17.5
Primary Metals	33	91.6	48.9	49.2	46.2	43.3
Fabricated Metals	34	155.6	98.9	120.7	123.4	122.6
Nonelectrical Mach.	35	159.8	119.5	126.5	124.6	123.7
Electrical Machinery	36	42.7	30.3	37.7	34.5	33.3
Motor Vehicle & Equip.	371	409.6	285.7	329.4	293.2	274.5
Other Trans. Equip.	372-379	14.2	16.9	21.8	19.4	19.6
Instruments	38	12.1	12.9	14.8	17.5	18.0
Miscellaneous Durables	39	9.4	6.7	7.3	7.3	7.9
Railroads	40	15.5	11.3	8.7	8.0	7.8
Trans., Commun.& Util.	41-49	140.4	129.6	142.2	144.9	144.3
Wholesale Durables	50	108.7	95.7	118.2	126.6	129.4
Wholesale Non-durables	51	55.5	54.6	66.6	69.0	71.7
Department Stores	53	95.4	82.9	96.6	107.6	110.3
Other Retail Trade	52,54,59	489.5	463.4	559.5	607.1	613.6
Finance, R.F. & Insur.	60-67	147.4	151.2	175.8	186.8	190.5
Services	70-89	613.8	657.3	809.5	885.1	909.2

SOURCE: Michigan Employment Security Commission

INDUSTRY TRENDS

Table III.E provides data on statewide industry employment levels from 1978 to PY 1989. Of the 29 industries listed, only 13 had employment in PY 1989 which exceeded the prerecessionary 1978 level. Over the last year, private industry jobs rose by only 0.7 percent, as 16 of 29 industries recorded increased employment.

Most manufacturing industries recorded a reduction in jobs over the last 10 years. Although job loss was widespread among industrial categories, a closer look reveals a concentration of job decline among large manufacturing firms. As Table III.F indicates, the job loss among firms with over 500 employees in Michigan over the last 10 years was staggering. Plant closings and job cutbacks since 1978 occurred among the largest of Michigan's manufacturing firms. Severe job losses were sustained in the motor vehicle industry as well as metals and nonelectrical machinery. The resulting unemployment and job dislocation continues to be a problem in some areas of the state. The relative concentration of job loss in certain manufacturing industries and among firms with varying employment levels must be understood to assess the likely characteristics of current dislocated workers and to effectively adopt measures to minimize future dislocation.

TABLE III.F
EMPLOYMENT IN MANUFACTURING
BY SIZE OF FIRM
MICHIGAN
1978 - 1988

FIRM EMPLOYMENT	1978	1988	CHANGE	PERCENT CHANGE
1-9	22,376	24,924	2,548	11.4
10-19	34,428	36,986	2,558	7.4
20-49	76,048	82,690	6,642	8.7
50-99	77,781	81,704	3,923	5.0
100-249	121,998	127,604	5,606	4.6
250-499	109,619	113,714	4,095	3.7
500-999	100,445	91,803	-8,642	- 8.6
1000 +	606,162	374,565	-231,597	-38.2
Total Manufacturing	1,148,857	933,990	-214,867	-18.7

Source: Michigan Employment Security Commission
Bureau of Research and Statistics ES-202

Over the last year, statewide jobs in the manufacturing sector continued to decline due primarily to job loss in the motor vehicle and related industries. Motor vehicle manufacturing employment plunged by over 6 percent from PY 1988 - PY 1989, with the closing of outdated production facilities and substantial modernization of existing plants. Related industries such as metals and machinery manufacturers also lost jobs.

Job growth in Michigan during PY 1989 was concentrated in the service producing sector, with growth in construction, wholesale trade, department stores and the service industry. Table III.G lists the industries which recorded above-average job growth in the long or short-term. It also demonstrates how Michigan's share of total national employment has changed in these industries since 1978. Although the state service producing industries have grown faster than average, their rates of increase have not kept pace with nationwide growth. In contrast, the only state industries with a significantly larger share of U.S. jobs are a few selected manufacturing industries such as furniture, plastics, and scientific instruments. This illustrates the importance of analysis of employment trends for specific industries, as strong statewide growth in some manufacturing industries is masked by the decline in overall manufacturing jobs.

TABLE III.G
MICHIGAN GROWTH INDUSTRIES

INDUSTRY	PERCENT EMPLOYMENT CHANGE 1978-89	PERCENT EMPLOYMENT CHANGE 1988-89	MICH. PERCENT OF U.S. EMPLOYMENT 1978	MICH. PERCENT OF U.S. EMPLOYMENT 1989
Total Private	9.2	0.7	4.2	3.6
Furniture Mfg.	64.7	0.9	4.4	6.7
Printing	33.6	2.7	2.8	2.8
Plastic Products	38.4	-3.2	4.9	6.1
Instruments	48.8	2.9	1.9	2.3
Wholesale Durables	19.0	2.2	3.7	3.5
Wholesale Nondurables	29.2	3.9	2.7	2.8
Department Stores	15.6	2.5	4.1	4.4
Other Retail	25.4	1.1	4.0	3.6
Finance, Ins., R.E.	29.2	2.0	3.1	2.8
Services	48.1	2.7	3.8	3.4

Source: Michigan Employment Security Commission
U.S. Department of Labor

Similarly, job additions during PY 1989 in the service producing sector varied with higher rates of growth in wholesale trade and services. Jobs in retail trade, and finance, insurance and real estate industries also increased faster than the state average. The transportation, communication, and utilities sector was the only service producing industry with a net reduction in jobs in PY 1989.

INDUSTRY PROJECTIONS

High interest rates and slow growth in the national economy are forecast for PY 1990. This is projected to reduce construction activity in Michigan, and an expected decline in auto sales will produce job reductions in Michigan's manufacturing sector.

Table III.H presents projections of statewide industry employment for PY 1990 and PY 1991. As it indicates, slow growth of less than two percent in industry jobs is projected over this two-year period. This is due to expected continued decline in employment in the goods producing sector during PY 1990 and PY 1991. The major reduction in employment in PY 1990 are anticipated in construction and in durable goods manufacturing such as motor vehicles, metals, and machinery. As a result of these cutbacks, total industry jobs are not expected to grow during PY 1990.

TABLE III.H
INDUSTRY EMPLOYMENT PROJECTIONS
MICHIGAN

(Data in Thousands)

	PY 1989 (Actual)	PY 1990 (Proj.)	PY 1991 (Proj.)	CHANGE PY 89 TO PY 91 Number	Percent
Total	3,907	3,908	3,968	61	1.6
Goods Producing	1,096	1,071	1,083	-13	-1.2
Manufacturing	947	928	938	- 9	-1.0
Const. & Mining	149	143	145	- 4	-2.7
Service Producing	2,811	2,837	2,885	74	2.6
Trans., Comm., Ut.	152	154	154	2	1.3
Wholesale Trade	201	201	202	1	0.5
Retail Trade	724	728	738	14	1.9
Fin., Ins., Real Est.	191	192	194	3	1.6
Services	909	927	954	45	5.0
Government	634	636	642	3	1.3

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

Job growth will occur in the state's service producing sector. However, the slowdown in the state economy should reduce service producing job growth to under half the rate of the last two years. Total service producing employment is expected to increase only 2.6 percent through PY 1991, fueled by continued gains in the service industry.

Business, medical, social and consulting services are projected to record job gains. Sluggish employment growth is anticipated in the rest of the service producing sector. Although the retail and service sectors comprised 58 percent of service producing jobs during PY 1989, they are anticipated to generate 80 percent of service producing employment growth through PY 1991.

OCCUPATIONAL EMPLOYMENT PROJECTIONS

OCCUPATIONAL DATA SYSTEM

The Michigan Employment Security Commission (MESC) generates detailed statistics on projected occupational employment and related information on occupational demand and supply for Michigan and many of its subregions. The appendix of this report contains a detailed table of occupational projections for Michigan for the period 1988-2000.

The tables in this section were created from data downloaded from the Michigan Occupational Information Coordinating Committee (MOICC) Occupational Projections and Training Information for Michigan (OPTIM) system. Slight differences exist between data presented in the tables in this section and those in the appendix of the report, and are due only to different levels of rounding.

OPTIM resides on the Wayne State University computer, and is accessible to anyone with an account on that computer, through the statewide MERIT telecommunications system, or through the Autonet or Telenet systems. For further information on OPTIM, contact MOICC, P.O. Box 30015, Lansing, MI 48909 or call (517)373-0363.

OCCUPATIONAL FORECASTS TO YEAR 2000

Michigan projections call for total occupational employment, which includes wage and salary jobs as well as agriculture and self employment, to reach nearly 4.6 million by year 2000. The 435 thousand jobs expected to be added to the state's economy between 1988 and 2000 represent a growth rate of 10.5 percent. With future job growth expected to be concentrated in the private service producing industries, the occupational forecasts call for rapid expansion in the white collar and service worker groups.

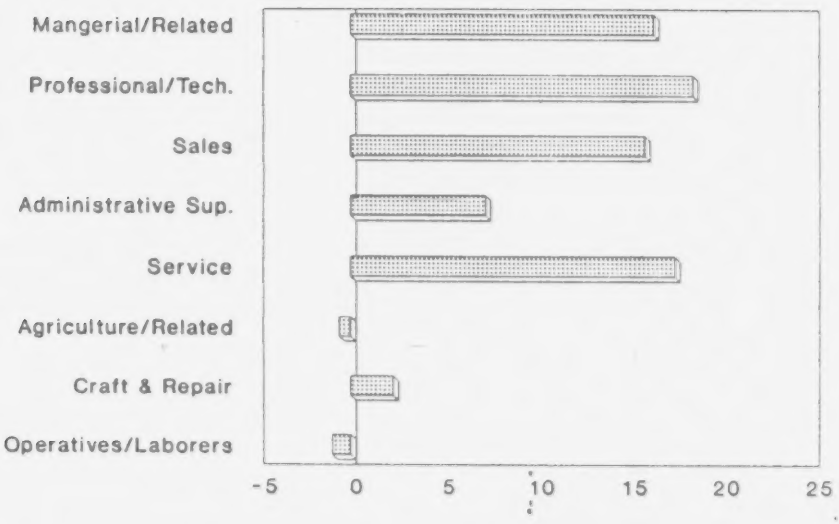
Service workers, which are among the state's fastest growing occupational groups, will account for 27 percent of the jobs added to the year 2000. Among the white collar groups, very strong growth patterns are forecast for the professional, technical, managerial, and sales fields. Expansion in the administrative support group which includes clerical workers is expected to be somewhat slower than average.

The blue collar occupations will experience only limited expansion given the no growth scenario in manufacturing. The best blue collar job prospects are in the craft and repair fields where employment is projected to show some growth to the year 2000.

The overall outlook in the operators, fabricators, and laborers category is for very limited expansion. Transportation and material moving workers are one of the few groups expected to show employment growth. Jobs for machine setters and operators are projected to decline reflecting the trends for manufacturing employment. A similar negative employment pattern is forecast for assembler and handwork jobs.

Figure 9

MICHIGAN
OCCUPATIONAL GROWTH 1988 - 2000
(Percent Change)



Looking at expected employment trends in more detail, the health services field is expected to show very rapid growth, creating strong demand in practically the entire spectrum of health occupations.

In the professional technical related occupations, computer applications will continue to expand and employment opportunities should be very good for systems personnel, programmers and computer repair occupations. With the increased emphasis on product development and improved manufacturing processes, the outlook is favorable for several engineering fields. The widespread application of electronics technology should result in rapid growth for both engineers and technicians in this field.

Several other occupational areas will reflect good employment opportunities. The legal area shows good growth potential for professionals and legal assistants and law clerks. Expansion in protective services is expected to be strong with substantial employment gains forecast for corrections officers and security guards. Rapid employment growth is forecast in the food service industry covering a wide range of restaurant and fast food workers.

In data related occupations, employment of accountants should continue to move up rapidly. Although automated accounting systems have limited growth for bookkeepers and accounting technicians, this large field is expected to generate a substantial number of job openings.

The widespread use of computerized word processing equipment has slowed expansion in the secretarial field. However, the large secretarial employment base should continue to fuel demand and produce a favorable hiring pattern.

MICHIGAN
OCCUPATIONS WITH THE MOST NEW JOBS
1988 - 2000

General Managers/Administrators
Retail Sales Workers and Cashiers
Registered Nurses
Waiters/Waitresses
Janitors/Cleaners
Security Guards
General Office Clerks
Accountants and Auditors
Secretaries and Receptionists
Truck Drivers
Food Preparation Workers
Computer Programmers and Systems Analysts
Nursing Aides/Orderlies
Electrical and Electronic Engineers
Teachers
Home Health Aides
General Utility Maintenance Repairers

JTPA TARGET POPULATION GROUPS

TABLE V.A
TITLE II ELIGIBLE POPULATION
LABOR FORCE ADJUSTED ECONOMICALLY DISADVANTAGED
MICHIGAN
1989

	Total Economically Disadvantaged	Economically Disadvantaged	
		Number	Percent Distribution
TOTAL 14+(*)	1,130,113	671,492	100.0
Male	445,859	301,104	44.8
Female	684,254	370,388	55.2
AGE GROUP			
14-15	56,968	NA	NA
16-19	128,113	73,910	11.0
20-21	74,294	55,775	8.3
22-54	628,926	483,574	72.0
55-64	116,072	49,456	7.4
65+	125,740	8,777	1.3
RACE/ETHNIC			
White	736,102	464,166	69.1
Black	345,053	177,235	26.4
American Indian	11,708	7,167	1.1
Asian/Pacific Isle	8,023	4,845	0.7
Hispanic	29,227	18,079	2.7

* NOTE: Labor force data apply only to persons 16 years old and older.

SOURCE: Michigan Employment Security Commission

TABLE V.B

ECONOMICALLY DISADVANTAGED
ELIGIBLE POPULATION

1989

SDA: MICHIGAN

TOTAL	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	29587	23980	675	507	2219	56968
	16 - 19	76009	45138	1873	612	4481	128113
	20 - 21	50330	20662	862	529	1911	74294
	22 - 44	348521	153656	6194	4673	14465	527509
	45 - 54	62650	34391	781	578	3017	101417
	55 - 64	69537	43433	576	445	2081	116072
	65 +	99468	23793	747	679	1053	125740
	TOTAL	736102	345053	11708	8023	29227	1130113

MALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	16684	13260	448	318	1216	31926
	16 - 19	39354	21827	941	315	2556	64993
	20 - 21	23753	7913	381	323	723	33093
	22 - 44	131705	56309	2818	2516	5787	199135
	45 - 54	25605	12532	391	296	1416	40240
	55 - 64	23530	12573	259	230	948	37540
	65 +	31268	6636	337	297	394	38932
	TOTAL	291899	131050	5575	4295	13040	445859

FEMALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	12903	10720	227	189	1003	25042
	16 - 19	36655	23311	932	297	1925	63120
	20 - 21	26577	12749	481	206	1188	41201
	22 - 44	216816	97347	3376	2157	8678	328374
	45 - 54	37045	21859	390	282	1601	61177
	55 - 64	46007	30860	317	215	1133	78532
	65 +	68200	17157	410	382	659	86808
	TOTAL	444203	214003	6133	3728	16187	684254

TABLE V.C

ECONOMICALLY DISADVANTAGED
LABOR FORCE

1989

SDA: MICHIGAN

TOTAL	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	0	0	0	0	0	0
	16 - 19	51715	17370	985	267	2715	73052
	20 - 21	40096	12656	524	269	1332	54877
	22 - 44	282808	106817	4468	3175	10744	408012
	45 - 54	47712	22507	598	447	2127	73391
	55 - 64	31292	15503	188	235	887	48105
	65 +	7084	1254	38	49	78	8503
	TOTAL	460707	176107	6801	4442	17883	665940

MALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	0	0	0	0	0	0
	16 - 19	26911	9074	549	127	1448	38109
	20 - 21	19503	5335	296	187	557	25878
	22 - 44	123052	42588	2272	1943	5111	174966
	45 - 54	22941	8937	337	257	1156	33628
	55 - 64	13892	5748	107	161	501	20409
	65 +	2897	444	27	21	40	3429
	TOTAL	209196	72126	3588	2696	8813	296419

FEMALE	AGE GROUP	WHITE	BLACK	AM INDIAN	AS PACIFIC	HISPANIC	TOTAL
	14 - 15	0	0	0	0	0	0
	16 - 19	24804	8296	436	140	1267	34943
	20 - 21	20593	7321	228	82	775	28999
	22 - 44	159756	64229	2196	1232	5633	233046
	45 - 54	24771	13570	261	190	971	39763
	55 - 64	17400	9755	81	74	386	27696
	65 +	4187	810	11	28	38	5074
	TOTAL	251511	103981	3213	1746	9070	369521

TABLE V.D

HANDICAPPED POPULATION
MICHIGAN

	TOTAL	IN LABOR FORCE		NOT IN LABOR FORCE ABLE TO WORK	
		TOTAL	ECONOMICALLY DISADVANTAGED	TOTAL	ECONOMICALLY DISADVANTAGED
Total 16+	878,194	232,983	54,536	645,074	300,012
Male	411,381	154,101	28,567	257,210	82,137
Female	466,813	78,882	25,969	387,864	217,875
16-19	20,950	7,846	4,990	13,085	11,821
20-21	14,608	7,652	2,886	6,945	5,136
22-44	193,897	105,676	28,706	88,186	66,941
45-54	123,319	48,814	8,993	74,480	49,988
55-64	198,665	48,114	6,444	150,524	71,879
65+	326,755	14,881	2,517	311,854	94,247
White	719,846	193,444	41,625	526,295	224,057
Black	140,474	33,786	11,009	106,674	68,101
American Indian	5,022	1,625	669	3,389	2,122
Asian Pacific	1,913	519	59	1,394	779
Hispanic	10,939	3,609	1,174	7,322	4,953

Source: 1980 Census

TABLE V.E

HIGH SCHOOL DROPOUTS
MICHIGAN

	1980 POPULATION		HIGH SCHOOL DROPOUTS	
	TOTAL	ECONOMICALLY DISADVANTAGED	TOTAL	ECONOMICALLY DISADVANTAGED
Total 16+	6,731,411	1,029,464	1,804,990	435,905
Male	3,215,305	366,550	870,381	145,858
Female	3,516,106	662,914	934,609	290,047
16-21	1,071,888	243,413	134,057	46,881
22-64	4,804,002	621,255	1,136,986	265,745
65+	855,521	164,796	533,947	123,279
White	5,788,873	739,933	1,455,963	294,884
Black	781,737	251,197	293,237	122,709
American Indian	28,028	8,106	10,536	3,863
Asian Pacific	37,273	6,524	5,854	1,628
Hispanic	95,500	23,704	39,400	12,821

Source: 1980 Census

TABLE V.F

TEENAGE PARENTS
BY SERVICE DELIVERY AREA

AREA	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	565	316
Berrien-Cass-Van Buren	780	580
Lansing Tri-County	900	500
City of Detroit	4,360	2,920
Thumb Area	676	299
CAPC	462	230
Region II	780	400
Kalamazoo-St. Joseph	872	402
Kent County	1,220	660
Livingston-Washtenaw	560	140
Macomb-St. Clair	1,040	400
Saginaw-Midland-Bay	1,218	677
Downriver-Monroe	1,207	447
Oakland County (Balance)	703	225
Muskegon-Oceana	560	420
Allegan-Ottawa	454	188
Pontiac Area	670	250
Genesee-Shiawassee	1,838	1,094
Wayne County (Balance)	1,100	460
Region 7B	380	160
West Central Michigan	400	260
Northeast Michigan	360	260
Northwest Michigan	500	260
Eastern Upper Peninsula	194	95
Central Upper Peninsula	558	243
Western Upper Peninsula	188	29
State of Michigan	22,545	11,915

Source: 1980 Census

TABLE V.G

LIMITED ENGLISH PROFICIENCY
BY SERVICE DELIVERY AREA

AREA	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	580	196
Berrien-Cass-Van Buren	1,180	500
Lansing Tri-County	2,320	1,100
City of Detroit	13,960	4,740
Thumb Area	557	174
CAPC	475	240
Region II	960	300
Kalamazoo-St. Joseph	691	341
Kent County	2,500	800
Livingston-Washtenaw	1,480	400
Macomb-St. Clair	6,780	1,220
Saginaw-Midland-Bay	1,776	766
Downriver-Monroe	2,441	537
Oakland County (Balance)	5,306	1,378
Muskegon-Oceana	300	100
Allegan-Ottawa	999	475
Pontiac Area	1,256	559
Genesee-Shiawassee	1,509	392
Wayne County (Balance)	7,460	2,020
Region 7B	380	80
West Central Michigan	260	140
Northeast Michigan	260	120
Northwest Michigan	520	140
Eastern Upper Peninsula	192	69
Central Upper Peninsula	739	280
Western Upper Peninsula	636	215
State of Michigan	55,517	17,282

Source: 1980 Census

TABLE V.H

ALCOHOLICS AND ADDICTS
SUBSTANCE ABUSE ADMISSIONS
FISCAL YEAR 1988/1989

AREA	TOTAL ADMISSIONS
Barry-Branch-Calhoun	1,243
Berrien-Cass-Van Buren	1,575
Lansing Tri-County	2,699
City of Detroit	9,258
Thumb Area	1,165
CAPC	1,023
Region II	1,614
Kalamazoo-St. Joseph	3,463
Kent County	3,302
Livingston-Washtenaw	1,918
Macomb-St. Clair	4,262
Saginaw-Midland-Bay	2,167
Downriver-Monroe (*)	710
Oakland County (Balance) (*)	6,031
Muskegon-Oceana	1,801
Allegan-Ottawa	2,036
Pontiac Area	NA
Genesee-Shiawassee	4,371
Wayne County (Balance) (#)	7,773
Region 7B	735
West Central Michigan	852
Northeast Michigan	661
Northwest Michigan	1,160
Eastern Upper Peninsula	488
Central Upper Peninsula	1,779
Western Upper Peninsula	877
State of Michigan	62,963

Source: Michigan Association of Substance Abuse Coordinators, Inc.

(*) Estimates are for county only, not SDA

(#) Wayne County minus the city of Detroit.

TABLE V.I

OFFENDERS
BY SERVICE DELIVERY AREA
JULY 1990

AREA	TOTAL	PAROLEES	CORRECTION CENTER
Barry-Branch-Calhoun	1,001	202	799
Berrien-Cass-Van Buren	1,196	270	926
Lansing Tri-County	1,331	259	1,072
City of Detroit	15,834	4,514	11,320
Thumb Area	345	77	268
CAPC	854	156	698
Region II	2,159	505	1,654
Kalamazoo-St. Joseph	1,558	317	1,241
Kent County	2,561	659	1,902
Livingston-Washtenaw	1,893	524	1,369
Macomb-St. Clair	1,715	436	1,279
Saginaw-Midland-Bay	1,774	359	1,415
Downriver-Monroe (*)	363	62	301
Oakland County (*)	4,684	1,398	3,286
Muskegon-Oceana	1,455	358	1,097
Allegan-Ottawa	598	138	460
Pontiac Area	NA	NA	NA
Genesee-Shiawassee	3,010	643	2,367
Wayne County (*)	1,213	395	818
Region 7B	223	54	169
West Central Michigan	330	79	251
Northeast Michigan	265	57	208
Northwest Michigan	594	150	444
Eastern Upper Peninsula	147	43	104
Central Upper Peninsula	354	78	276
Western Upper Peninsula	91	24	67
State of Michigan	45,548	11,757	33,791

Source: Michigan Department of Corrections
Data does not reflect total inmate population.

(*) Estimates are for county only, not SDA.

TABLE V.J

VETERANS

BY SERVICE DELIVERY AREA

	VETERAN POPULATION		VETERAN LABOR FORCE	
	TOTAL	ECONOMICALLY DISADVANTAGED	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	28,639	2,444	23,113	1,482
Berrien-Cass-Van Buren	33,820	2,840	28,140	1,660
Lansing Tri-County	46,120	2,740	39,740	1,700
City of Detroit	126,740	18,420	92,960	8,580
Thumb Area	22,058	2,140	18,064	1,344
CAPC	21,481	1,760	17,755	1,031
Region II	33,960	2,460	28,580	1,420
Kalamazoo-St. Joseph	31,221	1,846	26,909	1,171
Kent County	52,100	3,280	43,420	1,480
Livingston-Washtenaw	39,760	2,160	34,800	1,160
Macomb-St. Clair	108,160	5,300	94,040	3,020
Saginaw-Midland-Bay	48,239	3,998	39,459	2,253
Downriver-Monroe	64,996	3,738	54,820	1,867
Oakland County (Balance)	103,348	3,444	91,159	2,170
Muskegon-Oceana	23,340	2,080	19,000	1,200
Allegan-Ottawa	26,416	1,639	22,568	919
Pontiac Area	27,339	2,028	23,354	1,212
Genesee-Shiawassee	64,023	4,673	52,255	2,573
Wayne County (Balance)	100,360	4,400	85,640	2,380
Region 7B	17,300	2,060	11,340	1,100
West Central Michigan	15,580	1,900	11,360	940
Northeast Michigan	15,320	1,920	11,160	1,080
Northwest Michigan	26,240	2,940	19,760	1,560
Eastern Upper Peninsula	6,289	682	4,845	424
Central Upper Peninsula	27,172	2,862	21,265	1,672
Western Upper Peninsula	12,153	1,468	8,053	640
State of Michigan	1,122,174	85,222	923,559	46,038

Source: 1980 Census

TABLE V.K

DISPLACED HOMEMAKERS
BY SERVICE DELIVERY AREA

AREA	TOTAL	ECONOMICALLY DISADVANTAGED
Barry-Branch-Calhoun	1,480	996
Berrien-Cass-Van Buren	2,220	1,680
Lansing Tri-County	2,200	1,460
City of Detroit	29,560	23,420
Thumb Area	1,182	853
CAPC	787	533
Region II	1,920	1,040
Kalamazoo-St. Joseph	1,054	739
Kent County	2,520	1,560
Livingston-Washtenaw	1,220	540
Macomb-St. Clair	4,860	2,400
Saginaw-Midland-Bay	3,258	2,290
Downriver-Monroe	3,562	1,921
Oakland County (Balance)	3,481	1,509
Muskegon-Oceana	1,440	880
Allegan-Ottawa	778	541
Pontiac Area	1,812	1,109
Genesee-Shiawassee	5,331	3,752
Wayne County (Balance)	6,080	3,320
Region 7B	960	560
West Central Michigan	840	480
Northeast Michigan	720	480
Northwest Michigan	1,200	700
Eastern Upper Peninsula	342	219
Central Upper Peninsula	1,157	707
Western Upper Peninsula	798	464
State of Michigan	80,762	54,153

Source: 1980 Census

TABLE V.L

RATIO OF GOVERNMENT TO WAGE AND SALARY EMPLOYMENT
BY SERVICE DELIVERY AREA
1989

AREA	TOTAL	PRIVATE	GOVERNMENT	PERCENT
Barry-Branch-Calhoun	81,525	64,250	17,275	21
Berrien-Cass-Van Buren	94,000	78,700	15,300	16
Lansing Tri-County	212,900	145,200	67,700	32
City of Detroit	NA	NA	NA	NA
Thumb Area	52,050	39,175	12,875	25
CAPC	64,175	47,275	16,900	26
Region II	98,450	80,750	17,700	18
Kalamazoo-St. Joseph	133,025	112,250	20,775	16
Kent County	264,950	241,325	23,625	9
Livingston-Washtenaw	200,150	143,900	56,250	28
Macomb-St. Clair	332,675	288,675	44,400	13
Saginaw-Midland-Bay	159,100	138,700	20,400	13
Downriver-Monroe (*)	32,950	27,150	5,800	18
Oakland County (*)	599,525	551,775	47,750	8
Muskegon-Oceana	63,050	52,100	10,950	17
Allegan-Ottawa	107,050	93,075	13,975	13
Pontiac Area	NA	NA	NA	NA
Genesee-Shiawassee	182,450	155,450	27,000	15
Wayne County (*)	925,300	791,275	134,025	14
Region 7B	32,225	23,200	9,025	28
West Central Michigan	34,150	23,225	10,925	32
Northeast Michigan	37,450	29,225	8,225	22
Northwest Michigan	89,100	73,800	15,300	17
Eastern Upper Peninsula	17,050	10,375	6,675	39
Central Upper Peninsula	65,075	49,200	15,875	24
Western Upper Peninsula	26,850	17,675	9,175	34
State of Michigan	3,904,500	3,277,300	627,300	16

Note: The State of Michigan total is an independent estimate. The SDA estimates do not sum to the state.

(*) Estimates are for county only, not SDA.

NA: Not Applicable

TABLE V.M

RATIO OF PRIVATE EMPLOYMENT TO POPULATION
BY SERVICE DELIVERY AREA
1989

AREA	PERCENT
Barry-Branch-Calhoun	29
Berrien-Cass-Van Buren	29
Lansing Tri-County	34
City of Detroit	NA
Thumb Area	19
CAPC	23
Region II	29
Kalamazoo-St. Joseph	40
Kent County	49
Livingston-Washtenaw	36
Macomb-St. Clair	34
Saginaw-Midland-Bay	35
Downriver-Monroe (*)	20
Oakland County (*)	51
Muskegon-Oceana	29
Allegan-Ottawa	34
Pontiac Area	NA
Genesee-Shiawassee	31
Wayne County (*)	39
Region 7B	18
West Central Michigan	18
Northeast Michigan	24
Northwest Michigan	32
Eastern Upper Peninsula	20
Central Upper Peninsula	28
Western Upper Peninsula	21
State of Michigan	36
United States	.37

(*) Estimates are for county only, not SDA.

NA: Not Applicable

TABLE V.N

WELFARE REGISTRANTS
MICHIGAN
JULY 1990

	Registrants
Total	330,570
Female	234,184
Male	96,386
14-15	13
16-19	40,469
20-21	21,029
22-44	227,626
45-54	27,985
55-64	12,638
65+	810
White	155,726
Black	160,600
American Indian	1,473
Asian Pacific	4,184
Hispanic	8,587

Source: Michigan Department of Social Services, AFDC and GA Registrants (includes students and elderly)

TABLE V.O

DISLOCATED WORKERS - MESC JOB SERVICE
MICHIGAN
PY 1989

	Michigan	Percent Distribution
Total	215,045	100.0
Age		
16-19	8,032	3.7
20-21	12,672	5.9
22-39	132,371	61.6
40-54	47,681	22.2
55+	14,013	6.5
Sex		
Male	140,736	65.4
Female	74,295	34.6
Highest Grade Completed		
0-7	2,104	1.0
8-11	38,807	18.0
12	115,830	53.9
Over 12	58,281	27.1
Race		
White (not Hispanic)	162,255	75.7
Black (not Hispanic)	44,689	20.8
Hispanic	5,031	2.3
American Indian	1,401	0.7
Asian	1,037	0.5

SOURCE: Michigan Employment Security Commission
Employment Security Automated Reporting System (ESARS)

TABLE DESCRIPTIONS

VI. TABLE DESCRIPTIONS

Following is a discussion of basic data elements presented in this report. The data elements are divided into several major groups: (1) general planning information which covers data on industry, occupation and labor force; (2) the eligible population which covers the economically disadvantaged; (3) those target groups covered by the Title II "ten percent provision"; (4) special JTPA tables which cover data specifically required in the legislation. Those tables based on census data were generated from Summary Tape File 4 (STF-4) micro files. Following each data element is a discussion of issues involved, particularly definitions and data availability.

General Planning Information Tables

Civilian Labor Force

Civilian labor force estimates for PY 1991 are available for the state, labor market areas and service delivery areas. Except for the state, information is available for mutually exclusive categories by sex, age and race.

Total labor force, employment and unemployment forecasts were based upon area population and industry employment trends. Distributions by age, race, sex and geographic detail were derived using 1980 census information.

Private Industry Employment Analysis

This information is based on the ES-202 listing of all employers covered by the Michigan Employment Security Act. This listing covers over 90 percent of all employers doing business in Michigan. The major groups which are wholly or partially excluded are railroad employees, commission sales workers, unpaid family workers and government.

Industry employment figures are provided for the total SDA. In some instances, information for counties within a multi-county SDA may be available upon request. Since this data is not available below the county level, sub-county SDA's are provided with their respective county level information. Average employment levels are presented by two digit Standard Industrial Classification Codes for the latest quarter available. The absolute change in employment over the year is also shown. Data for some industries have been excluded to prevent disclosure of confidential information. Since this employment data represents the most current count of jobs by place of work at the county level, it is useful in analyzing local area employment structure and trends.

Title II Eligible Population Tables

JTPA Title II Eligible Population

This table contains estimates of the economically disadvantaged population and labor force in 1987. Further detail, cross-tabulated by age, race and sex is also provided. The data were developed by linking forward the 1980 Census information using the March 1988 Current Population Survey for Michigan. This table provides a profile of the disadvantaged adjusted by age/race/sex for potential labor force participation. That is, the last column in the table depicts the disadvantaged assuming that they were to participate in the labor force to the same extent as the general population. This is an important planning guide since it more closely reflects the disadvantaged who are likely to be active in the job market and, therefore, to avail themselves of JTPA services. This table provides demographic detail for each service delivery area in total. County breakouts will be available only as percent distribution of SDA totals.

Handicapped

A handicapped individual is defined as an individual who has a physical or mental disability which for such individual constitutes or results in a substantial handicap to employment. The information in this table is derived from 1980 Census data. The table presents demographic characteristics on the total handicapped population. Additional information is provided for both total and economically disadvantaged handicapped individuals, in the labor force and not in the labor force but able to work. Census information for the handicapped reflect public transportation disability and is only available for those labor force attached individuals 16 years and older. Persons are identified as having a public transportation disability if they had a health condition which had lasted six months or more and which made it difficult or impossible for them to use buses, trains, subways or other forms of public transportation. Information in the table is only available for the total SDA.

School Dropouts

In addition to the ten percent provision, services to school dropouts are also mandated under Section 203(b),3 as an "equitable service" item and under Section 205(b),1 as a priority item. According to JTPA legislation, a school dropout is an individual who is: (1) not attending any school and is not subject to a compulsory attendance law, and (2) who has not received a secondary school diploma or a certificate from a program of equivalency for such a diploma.

The information in this table is derived from 1980 Census data, and provides demographic characteristics for persons 16 years and older in the general population as well as the school dropout population in 1980. In addition, for both categories information is provided on those who are economically disadvantaged. Information in the table is only available for the total SDA.

Title II - Ten Percent Provision Target Groups

Alcoholics and Addicts

This table reflects data on admissions to substance abuse treatment programs and is generated by the Michigan Association of Substance Abuse Coordinators. Since information was only available at the county level, data for city level service delivery areas is not provided.

Displaced Homemakers

The following statement represents an updated definition for displaced homemakers consistent with legislation and data availability. A displaced homemaker is an individual who is:

1. 35-62 years of age
2. divorced, separated or widowed
3. currently not employed
4. has not been employed within the last five years

These characteristics are cross-tabulated from 1980 Census data to arrive at a more current estimate of "displaced homemakers" in both definitional and data terms. Information in the table is only available for the total SDA.

Limited English Language Proficiency

The information in this table is based on 1980 Census data on ability to speak English. This information is derived from responses to question 13c in the census where persons who reported they spoke a language other than English were asked to characterize their ability to speak English. These responses are extremely subjective since they are based on the respondent's own perception.

Offenders

The term "offender" means any adult or juvenile who is or has been subject to any state of the criminal justice process for whom services under JTPA may be beneficial or who requires assistance in overcoming artificial barriers to employment resulting from a record of arrest or conviction. This table presents actual count data from the Michigan Department of Corrections. The table reflects parolees and residents of correction centers as of July 1990 by SDA from which sentenced. This information does not include offenders in local jails, juvenile courts or the federal facility in Milan. Since information was only available at the county level, data for city level service delivery areas are not provided.

Older Workers/Older Individuals

Older workers are defined as those 55 years of age and over. Services are mandated in two sections of JTPA; Section 124 and the ten percent provision of Title II. Section 124 refers to disadvantaged older individuals, and is presented as a subset of the economically disadvantaged information in Table I. The ten percent provision refers to all older workers, and is a subset of the civilian labor force data in Table 3.

Teenage Parents

The information in this table is based on 1980 Census data. Although teenage parents may be defined as teenagers aged 14-19 with dependent children, census data is only available for 15-19 year olds with dependent children. This table reflects the total teenage parent population as well as those economically disadvantaged for each service delivery area.

Veteran Population and Labor Force

The information in this table is based on 1980 Census data. The term "veteran" as defined by JTPA is an individual who served in the active military, naval, or air service, and who was discharged or released there from under conditions other than dishonorable.

According to 1980 Census data, more than one-third of all males 16 years and older are veterans. Since, a population estimate of all veterans will significantly overstate service needs, additional information is provided reflecting labor force attachment as well as those veterans, in the population and labor force who are economically disadvantaged.

Special JTPA Tables

Dislocated Workers - MESC Job Service

This information represents the number and characteristics of Job Service applicants coded and reported as dislocated workers on the Employment Security Automated Reporting System (ESARS) for PY 1989. SDA totals were obtained by aggregating data from the appropriate MESC branch offices.

Ratio of Civilian Government to Wage and Salary Employment

This ratio is used to regulate the distribution of participants in on-the-job-training (OJT) between private and government employment. The information is derived from the Bureau of Labor Statistic's 790 Employment Survey data base generated by Michigan Employment Security Commission's Bureau of Research and Statistics (MESC-BRS). The data base is a monthly employment survey of establishments by place of work and does not include agricultural or self-employment.

The wage and salary employment estimates, based on place of work are used rather than total employment estimates from the census which are based on place of residence. The place of work data was considered more consistent with the legislation in terms of current information and the analysis of area industry structure.

For most SDA's, the data in the table is the percent of government to total wage and salary employment computed from MESC labor market area (LMA) wage and salary employment data. For SDA's which do not conform to LMA boundaries, the LMA data were disaggregated using county employment estimates based on employer reports under the unemployment insurance system (ES-202 report). Annual average 1988 wage and salary data were used for SDA's conforming to LMA boundaries. Annual average 1988 ES-202 data were used to disaggregate county employment for SDA's not conforming to labor market boundaries. Employment estimates by place of work are only available for SDA's comprising whole counties. It is recommended that sub-county SDA's use the information provided for their respective county.

Ratio of Private Employment to Population

This ratio is one of several criteria used to justify administrative costs in excess of the 30 percent limitation (Section 108, Part 2, b(ii)). The employment information is derived from the establishment survey data base described in the previous table. The population data is based on the U.S. Census of Population.

Welfare Registrants

Information in this table may be useful for additional program planning needs. The table is based on information from the Michigan Department of Social Services and represents as of July 1990 an actual count of individuals receiving financial support from the Aid to Families with Dependent Children and General Assistance programs. The information is provided by sex, race and age for each service delivery area on welfare registrants. Registrants are recipients who meet the worker requirement and must participate in training as well as work assignment. Information in the table is only available for the total SDA.

APPENDICES

VII APPENDICES

A. Glossary . . . . . .

B. Per Capita Personal Income by County . . . . . .

C. Unemployment Insurance Claimants by SDA. . . . . .

D. 1988-2000 Detailed Occupational Projections. . .

APPENDIX A

GLOSSARY

GLOSSARY

BENCHMARK (CURRENT EMPLOYMENT STATISTICS) indicates the most recent time period during which the industry employment estimates, which are based on a monthly sample of local employers, were compared with and adjusted to the total count of area jobs as reported under the Michigan Employment Security Act. Additionally, estimates of noncovered employment are included.

BENCHMARK (CURRENT POPULATION SURVEY) indicates the most recent time period during which the labor force, employment and unemployment estimates, by place of residence, were compared with and adjusted to the national household survey conducted in Michigan by the U.S. Bureau of Labor Statistics (BLS).

CIVILIAN LABOR FORCE (BY PLACE OF RESIDENCE) is the summation of the number of area residents who are estimated to be employed and the number of area residents estimated to be unemployed.

CURRENT POPULATION SURVEY is conducted monthly in approximately 3,000 Michigan households by the U.S. Bureau of the Census to derive civilian labor force, total employment and unemployment estimates for the state. These estimates are prepared directly by the U.S. Bureau of Labor Statistics (BLS) and released at the same time as the national figures each month. Labor force estimates for subareas of Michigan are compiled by the Bureau of Research and Statistics of the Michigan Employment Security Commission (MESC) based on standard BLS procedures. These independently derived figures for labor market areas are then adjusted for additivity to the statewide totals.

ECONOMICALLY DISADVANTAGED PERSON the term "economically disadvantaged" means an individual who meets one of the following criteria:

A. Receives, or is a member of a family which receives cash welfare payments under a federal, state or local welfare program;

B. Has, or is a member of a family which has received a total income for the six (6) months prior to application which is not in excess of the most recently established poverty levels determined in accordance with criteria established by the Office of Management and Budget (OMB), or is 70 percent of the lower standard of living;

C. Receives food stamps pursuant to the Food Stamp Act of 1977;

D. Is a foster child, on behalf of whom state or local government payments are made; or

E. Is an adult, handicapped individual whose own income meets the requirements of (A) or (B) above, but who is a member of a family whose income does not meet such requirements.

EMPLOYMENT, TOTAL includes an unduplicated estimate of area residents who earned wages during the week including the 12th of each month. This estimate includes agricultural employees, self-employed and unpaid family workers, domestics and strikers, as well as residents who were employed in wage and salary jobs within the labor market area or in another labor market area.

HANDICAPPED the term "handicapped individual" means any individual who has a physical or mental disability which for such individual constitutes or results in a substantial handicap to employment.

INCOME LEVELS FOR ECONOMICALLY DISADVANTAGED is the maximum annual income which can be received by an individual or family that is determined to be economically disadvantaged. The maximum income level varies according to size of family, and is either 70 percent of the Lower Living Standard Income Level (LLSIL) or the poverty level, whichever is the greater of the two figures. The following tables provide metropolitan and nonmetropolitan family income levels and identify which SDA's shall utilize the appropriate tables.

NONMETROPOLITAN AREAS
POVERTY INCOME LEVEL / 70 PERCENT OF LLSIL

Family Size	Income Level
1	$ 6,280 (poverty)
2	8,420 (poverty)
3	10,940
4	13,500
5	15,930
6	18,630

For families in excess of six members, add $2,700 for each additional member.

SDA's which will utilize the proverty/nonmetropolitan Lower Living Standard Income Level are: Region 7B, West Central Michigan, Northesast Michigan, Northwest Michigan, Eastern Upper Peninsula, Central Upper Peninsula and Western Upper Peninsula.

METROPOLITAN AREAS
POVERTY INCOME LEVEL / 70 PERCENT OF LLSIL

Family Size	Income Level
1	$ 6,280 (poverty)
2	8,470
3	11,630
4	14,350
5	16,940
6	19,810

For families in excess of six members, add $2,870 for each additional member.

SDA's which will utilize the poverty/metropolitan Lower Living Standard Income Level are: Barry-Branch-Calhoun, Berrien-Cass-Van Buren, Lansing Tri-County, City of Detroit, Thumb Area, CAPC, Region II, Kalamazoo-St. Joseph, Kent County, Livingston-Washtenaw, Macomb-St. Clair, Saginaw-Midland-Bay, Downriver-Monroe, Oakland County, Muskegon-Oceana, Allegan-Ottawa, Pontiac Area, Genesee-Shiawassee and Wayne County.

JOB TRAINING PARTNERSHIP ACT (JTPA) began operating in October 1984 with the purpose of providing job training and employment services to the unemployed. The primary role of the federal government is to set performance standards and allocate funds to the states, while the individual states coordinate and administer the JTPA programs.

LABOR MARKET AREAS (LMA'S) consist of a central community and surrounding territory in which there is a concentration of economic activity or labor demand and in which workers can generally change jobs without changing their residence. Major labor market areas (MSA's) have a central city (or adjoining cities) with a population of 50,000 or more. Small labor market areas must have a central community that has a population nucleus of 5,000 or more.

METROPOLITAN STATISTICAL AREAS (MSA'S) are designated and defined by the U.S. Department of Commerce so that local economic and social statistics collected by many government and private organizations may be presented on a common geographic basis. Areas qualifying as metropolitan statistical areas have either a city with a population of at least 50,000 or a Bureau of the Census urbanized area of at least 50,000 and a total metropolitan statistical area population of at least 100,000.

OFFENDER the term "offender" means any adult or juvenile who is or has been subject to any stage of the criminal justice process and for whom services under employment and training legislation may be beneficial or who requires assistance in overcoming artificial barriers to employment resulting from a record of arrest or conviction.

SERVICE DELIVERY AREAS (SDA's) are geographic areas designated by the Governor to develop and implement relevant employment and training programs in the local area.

UNEMPLOYMENT RATE is the total number of unemployed in the labor market area divfided by the civilian labor force in the labor market area.

UNEMPLOYMENT, TOTAL is an unduplicated estimate of area residents who did not earn any wages during the survey week including the 12th of the month, and who were able, available, and actively seeking work during the thirty-day period preceding the survey week.

WAGE AND SALARY EMPLOYMENT (BY PLACE OF WORK) is an estimate of the number of individual jobs in the area based on a survey of employers during the survey week. These estimates are available by industry and include nonresidents who commute into the labor market area for work, as well as individuals who have more than one job in the same labor market area.

WORKERS INVOLVED IN LABOR DISPUTES is an estimate of the number of jobs that are affected by a labor-management dispute during the entire survey week. Workers included in this category are not considered unemployed since they have job attachment.

APPENDIX B

PER CAPITA PERSONAL INCOME BY COUNTY

The per capita personal income estimates presented in this publication were produced by the Bureau of Economic Analysis. Personal income and derivative measures have a broad range of application. They are widely used in both the public and private sectors. For state and local governments, the estimates are useful inputs in economic resource profiles and in economic models developed for planning purposes.

Per capita personal income of an area is the income received by, or on behalf of all the residents of the area. Personal income is the sum of wage and salary disbursements, other labor income, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustments, personal dividend income, personal interest income, and transfer payments, less personal contributions for social insurance.

PER CAPITA PERSONAL INCOME BY COUNTY
1980 AND 1988

AREA	1980	1988
Michigan	10,165	16,544
Alcona	7,157	11,101
Alger	6,212	10,427
Allegan	8,547	13,861
Alpena	8,225	12,865
Antrim	8,311	12,604
Arenac	7,830	11,238
Baraga	7,042	10,944
Barry	9,006	14,167
Bay	9,516	14,436
Benzie	7,717	12,488
Berrien	8,886	14,173
Branch	8,618	12,200
Calhoun	9,244	14,215
Cass	8,516	14,018
Charlevoix	8,179	13,279
Cheboygan	7,576	11,463
Chippewa	6,983	10,723
Clare	6,813	10,305
Clinton	8,978	13,831
Crawford	6,464	10,124
Delta	7,912	12,321
Dickinson	9,350	15,173
Eaton	9,613	15,325
Emmet	9,048	15,358
Genesee	10,324	15,367
Gladwin	7,080	10,646
Gogebic	7,211	11,817
Grand Traverse	9,140	14,866
Gratiot	8,485	12,767
Hillsdale	8,147	12,814
Houghton	6,881	11,388
Huron	9,031	14,706
Ingham	9,781	16,228
Ionia	7,866	11,348
Iosco	7,301	11,593
Iron	8,026	12,151
Isabella	7,666	12,669
Jackson	9,421	14,311
Kalamazoo	9,871	16,703
Kalkaska	6,715	10,041

PER CAPITA PERSONAL INCOME BY COUNTY
1980 AND 1988
(Continued)

AREA	1980	1988
Kent	9,914	16,908
Keweenaw	6,692	9,746
Lake	6,062	9,196
Lapeer	9,143	14,717
Leelanau	9,138	15,475
Lenawee	9,427	14,901
Livingston	10,383	18,522
Luce	8,218	15,814
Mackinac	7,308	12,039
Macomb	10,904	18,774
Manistee	7,905	12,318
Marquette	7,936	12,716
Mason	7,759	12,180
Mecosta	6,268	10,342
Menominee	7,614	11,606
Midland	10,336	17,464
Missaukee	6,541	10,478
Monroe	9,412	15,127
Montcalm	8,348	11,652
Montmorency	7,075	10,961
Muskegon	8,708	13,226
Newaygo	7,481	11,693
Oakland	13,910	24,448
Oceana	7,658	12,147
Ogemaw	6,536	9,958
Ontonagon	7,516	12,155
Osceola	6,551	10,151
Oscoda	6,501	10,138
Otsego	8,140	13,149
Ottawa	9,382	16,190
Presque Isle	7,651	11,284
Roscommon	7,543	11,157
Saginaw	9,788	15,142
St. Clair	9,352	15,322
St. Joseph	8,604	13,566
Sanilac	8,735	12,926
Schoolcraft	7,441	11,598
Shiawassee	9,133	14,241
Tuscola	8,858	12,886
Van Buren	8,017	12,292
Washtenaw	11,927	21,175
Wayne	10,367	16,137
Wexford	7,082	11,593

Source: Bureau of Economic Analysis

APPENDIX C

UNEMPLOYMENT INSURANCE CLAIMANTS BY SDA

This information is prepared by the Michigan Employment Security Commission from the Unemployment Insurance Data base. This information represents unemployment insurance claims for regular benefits for the survey week which includes the 12th of the month during July 1990. The claimant data has been geographically distributed by Service Delivery Area.

UNEMPLOYMENT INSURANCE CLAIMANTS
BY SERVICE DELIVERY AREA
JULY 1990

AREA	REGULAR UNEMPLOYMENT INSURANCE
Barry-Branch-Calhoun	2,157
Berrien-Cass-Van Buren	2,893
Lansing Tri-County	3,459
City of Detroit	15,747
Thumb Area	2,565
CAPC	2,179
Region II	3,136
Kalamazoo-St. Joseph	2,524
Kent County	5,169
Livingston-Washtenaw	3,897
Macomb-St. Clair	12,214
Saginaw-Midland-Bay	3,084
Monroe County	1,662
Oakland County	9,731
Muskegon-Oceana	2,509
Allegan-Ottawa	2,843
Genesee-Shiawassee	5,063
Wayne County	12,747
Region 7B	998
West Central Michigan	1,484
Northeast Michigan	1,258
Northwest Michigan	3,318
Eastern Upper Peninsula	367
Central Upper Peninsula	2,102
Western Upper Peninsula	690
State of Michigan	103,796

Source: Michigan Employment Security Commission
Bureau of Research and Statistics

APPENDIX D

DETAILED OCCUPATIONAL PROJECTIONS

The following tables list detailed occupational projections for the SDA for the period 1988 - 2000. Included are employment levels for both years, net and percentage change in employment and data on annual openings.

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
TOTAL, ALL OCCUPATIONS	4,168,750	4,615,450	446,700	11	169,290	37,240	132,050
MANAGERIAL & ADMINISTRATIVE OCC.	303,650	349,750	46,150	15	15,040	3,840	11,200
ADMINISTRATIVE SERVICE MANAGERS	7,300	9,200	1,900	26	460	160	300
COMMUNICATION, TRANSP., UTIL. MGRS	3,250	3,700	400	12	160	30	130
CONSTRUCTION MANAGERS	4,550	5,350	850	18	250	70	180
EDUCATION ADMINISTRATORS	12,750	14,800	2,050	16	560	170	390
ENGINEER., MATH., NAT. SCI. MGR.	10,200	12,550	2,350	23	610	200	410
FINANCIAL MANAGERS	22,750	26,250	3,500	15	850	290	560
FOOD SERVICE & LODGING MANAGERS	19,750	25,250	5,500	28	1,280	460	820
GENERAL MANAGERS AND TOP EXEC.	97,200	109,050	11,850	12	4,730	990	3,740
GVMT CHIEF EXEC. & LEGISLATORS	2,300	2,350	50	1	120	0	120
INDUSTRIAL PRODUCTIO. MANAGERS	9,900	11,300	1,400	14	500	120	380
MARKETING, ADV., PUBLIC REL. MGRS	13,650	16,400	2,750	20	650	230	420
PERSONNEL, TRAINING, LABOR REL. MGR	6,800	7,900	1,150	17	300	100	200
PROPERTY & REAL ESTATE MANAGERS	4,900	6,350	1,400	29	490	120	370
PURCHASING MANAGERS	10,700	12,100	1,400	13	450	120	330
ALL OTHER MANAGERS & ADMINIST.	77,700	87,300	9,600	12	3,650	800	2,850
MANAGEMENT SUPPORT OCCUPATIONS	36,500	43,350	6,800	19	1,680	570	1,110
ACCOUNTANTS AND AUDITORS	28,050	33,200	5,150	18	1,270	430	840
BUDGET ANALYSTS	2,300	2,550	250	10	110	20	90
LOAN OFFICERS AND COUNSELORS	4,500	5,500	950	22	260	80	180
UNDERWRITERS	1,650	2,050	450	27	50	40	10
PURCHASING AGENTS AND BUYERS	13,550	14,550	1,050	8	560	90	470
PURCHASING AGENT EX.WHO/RET/FARM	8,450	9,250	800	10	340	70	270
WHOLESALE, RETAIL BUYERS, EX. FARM	5,100	5,300	200	4	220	20	200
PERSONNEL SPECIALISTS & RELATED	11,150	13,800	2,650	24	530	220	310
EMPLOYMENT INTERVIEWERS	2,800	4,350	1,550	56	220	130	90
PERSONNEL, TRAIN., LABOR REL. SPEC	8,350	9,450	1,100	13	310	90	220
ALL OTHER MANAGEMENT SUPPORT OCC	43,750	51,500	7,750	18	2,410	650	1,760
CLAIMS EXAMINERS, INSURANCE	700	950	200	31	50	20	30
CONSTRUCTION, BUILDING INSPECTOR	2,400	2,650	250	10	210	20	190
COST ESTIMATORS	7,300	7,950	650	9	250	50	200
INSPECTORS & COMPLIANCE OFFICERS	2,400	2,850	450	18	120	40	80
MANAGEMENT ANALYSTS	1,950	2,300	350	19	130	30	100
ALL OTHER MANAGEMENT SUPPORT WKS	28,950	34,850	5,900	20	1,660	490	1,170

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

PRELIMINARY

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
ENGINEERS, ARCHITECTS, SURVEYORS	113,850	134,450	20,650	18	4,390	1,720	2,670
ENGINEERS	65,800	78,250	12,400	19	2,730	1,040	1,690
AERONAUTICAL & ASTRO. ENGINEERS	350	300	-50	-9	10	0	10
CHEMICAL ENGINEERS	1,200	1,400	200	16	50	20	30
CIVIL ENGINEERS, INCL. TRAFFIC	3,900	4,550	650	16	170	50	120
ELECTRICAL & ELECTRONIC ENGINEER	16,350	23,300	6,950	42	940	580	360
INDUSTRIAL ENGINEERS, EXC. SAFETY	7,800	8,500	700	9	240	60	180
MECHANICAL ENGINEERS	27,650	30,900	3,250	12	1,010	270	740
METALLURGISTS AND REL. ENGINEERS	1,300	1,300	0	1	40	0	40
MINING ENGINEERS, INC. SAFETY	100	50	0	-14	0	0	0
NUCLEAR ENGINEERS	200	200	0	-9	0	0	0
PETROLEUM ENGINEERS	100	100	0	12	0	0	0
ALL OTHER ENGINEERS	6,850	7,600	750	11	260	60	200
ARCHITECTS AND SURVEYORS	4,850	5,650	800	16	190	70	120
ARCHITECTS, EXC. LAND. & MARINE	1,900	2,300	400	22	100	30	70
LANDSCAPE ARCHITECTS	100	150	50	29	0	0	0
SURVEYORS	2,850	3,200	350	12	80	30	50
ENGINEERING TECHNICIANS	32,250	37,650	5,400	17	1,060	450	610
DRAFTERS	22,950	25,050	2,100	9	660	180	480
ELECTRICAL & ELECTRONIC TECHN.	9,300	12,600	3,300	35	410	270	140
PHYSICAL SCIENTISTS	5,150	5,950	800	16	190	70	120
ATMOSPHERIC & SPACE SCIENTISTS	50	100	0	20	0	0	0
CHEMISTS	3,900	4,450	550	15	130	50	80
GEOLOGIST, GEOPHYSICIST, OCEANOG	450	550	100	22	30	10	20
PHYSICISTS AND ASTRONOMERS	300	350	100	28	20	10	10
ALL OTHER PHYSICAL SCIENTISTS	500	550	50	11	10	0	10
LIFE SCIENTISTS	5,750	6,950	1,250	21	220	100	120
AGRICULTURAL AND FOOD SCIENTISTS	1,100	1,450	400	36	60	30	30
BIOLOGICAL SCIENTISTS	1,850	2,150	300	17	60	30	30
FORESTER, CONSERVATION SCIENTIST	600	700	100	12	30	10	20
ALL OTHER LIFE SCIENTISTS	2,200	2,600	450	20	90	40	50
COMPUTER AND MATHEMATICAL OCC.	30,550	41,500	10,950	36	1,170	910	260
COMPUTER AND RELATED OCCUPATIONS	26,950	37,350	10,400	39	1,050	870	180
COMPUTER SYSTEMS ANALYSTS	11,850	16,250	4,400	37	470	370	100
COMPUTER PROGRAMMERS AND AIDES	14,850	20,750	5,950	40	570	490	80
PROGRAMMERS: NUMERICAL, TOOL	250	350	50	24	10	10	0

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

PRELIMINARY

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
COMPUTER, MATH, & RESEARCH ANALYST	3,600	4,150	550	15	130	50	80
ACTUARIES	300	450	150	43	20	10	10
MATHEMATICIANS & MATH SCIENTISTS	150	200	0	7	0	0	0
OPERATIONS AND RESEARCH ANALYSTS	1,600	2,100	500	31	70	40	30
STATISTICIANS	1,500	1,400	-100	-6	30	-10	40
SOCIAL SCIENTISTS, RECR., RELIGION	41,200	49,850	8,650	21	2,000	720	1,280
SOCIAL SCIENTISTS	8,300	9,500	1,250	15	250	110	140
ECONOMISTS	600	800	150	26	20	10	10
PSYCHOLOGISTS	3,950	4,750	800	21	130	70	60
URBAN AND REGIONAL PLANNERS	500	550	50	11	20	10	10
ALL OTHER SOCIAL SCIENTISTS	3,200	3,450	200	7	80	20	60
SOCIAL, RECREATION, RELIGION WKS	32,900	40,350	7,400	22	1,770	620	1,150
CLERGY	2,050	1,900	-150	-8	120	-10	130
DIRECTORS, RELIGIOUS ACTIV./EDUC.	2,000	1,750	-200	-11	110	-20	130
HUMAN SERVICES WORKERS	6,300	8,650	2,300	37	350	190	160
RECREATION WORKERS	8,800	9,550	750	9	440	60	380
SOCIAL WORKERS	13,750	18,500	4,700	34	730	390	340
LAW AND RELATED OCCUPATIONS	23,000	30,450	7,450	32	1,790	620	1,170
LAWYERS AND JUDICIAL WORKERS	18,750	24,700	5,900	32	1,520	490	1,030
JUDGES, MAGISTRATES, & JUD. WKS	1,150	1,300	150	14	100	10	90
LAWYERS	17,650	23,400	5,750	33	1,420	480	940
LEGAL ASSISTANTS & TECHNICIANS	4,200	5,750	1,550	36	270	130	140
PARALEGALS	1,250	2,150	900	70	110	70	40
TITLE EXAMINERS AND SEARCHERS	650	700	100	14	30	10	20
ALL OTHER LEGAL ASSISTANTS	2,350	2,900	550	24	140	50	90
TEACHERS, LIBRARIANS, COUNSELORS	187,950	209,400	21,450	11	6,870	1,650	5,220
COLLEGE AND UNIVERSITY FACULTY	27,300	26,850	-450	-2	480	-40	520
TEACHERS, PRESCHOOL, KIND., ELEM.	148,950	169,200	20,200	14	2,410	530	1,880
FARM & HOME MANAGEMENT ADVISORS	300	250	-50	-18	0	-10	10
INSTRUCTORS, NONVOCATIONAL EDUC.	4,550	5,200	700	15	270	60	210
TEACHERS, SECONDARY SCHOOL	43,600	50,700	7,100	16	1,440	590	850
TEACHERS, VOCATIONAL EDUCATION	9,100	9,500	400	4	430	30	400
ALL OTHER TEACHERS, INSTRUCTORS	29,700	35,450	5,700	19	1,840	480	1,360
LIBRARIANS, ARCHIVISTS & REL WKS	11,650	13,350	1,700	15	610	140	470
COUNSELORS	5,100	6,350	1,300	25	230	110	120

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
CURATORS, ARCHIVISTS, MUSEUM TECH.	350	400	50	12	40	0	40
LIBRARIANS, PROFESSIONAL	4,300	4,600	250	6	240	20	220
TECHNICAL ASSISTANTS, LIBRARY	1,900	2,000	100	6	110	10	100
HEALTH PRACTITIONERS, TECHNICIANS	176,600	223,750	47,150	27	9,100	3,930	5,170
HEALTH TREATING PRACTITIONERS	34,700	40,400	5,650	16	2,520	470	2,050
DENTISTS	8,800	10,100	1,350	15	620	110	510
OPTOMETRISTS	1,550	1,900	350	22	160	30	130
PHYSICIANS	22,350	25,850	3,500	16	1,600	290	1,310
PODIATRISTS	1,000	1,200	200	22	70	20	50
VETERINARIANS, VET. INSPECTORS	1,050	1,300	250	25	70	20	50
THERAPISTS	9,500	12,750	3,200	34	380	270	110
OCCUPATIONAL THERAPISTS	1,150	1,700	550	48	60	40	20
PHYSICAL THERAPISTS	1,800	2,600	800	44	100	70	30
RECREATIONAL THERAPISTS	550	750	150	31	20	10	10
RESPIRATORY THERAPISTS	2,300	3,200	900	39	100	80	20
SPEECH PATHOLOGISTS/AUDIOLOGISTS	2,600	3,000	400	16	60	40	20
ALL OTHER THERAPISTS	1,100	1,500	400	36	50	30	20
HEALTH CARE MAINTENANCE, TREATING	95,500	123,850	28,350	30	4,860	2,360	2,500
DIETICIANS AND NUTRITIONISTS	1,200	1,400	200	19	60	20	40
EMERGENCY MEDICAL TECHNICIANS	2,350	3,150	800	35	110	70	40
LICENSED PRACTICAL NURSES	22,700	28,150	5,500	24	1,050	460	590
OPTICIANS, DISPENSING & MEASUR.	3,050	3,550	500	16	140	40	100
PHARMACISTS	5,900	7,550	1,700	29	410	140	270
PHYSICIAN ASSISTANTS	2,100	2,350	250	12	40	20	20
REGISTERED NURSES	58,250	77,700	19,400	33	3,050	1,620	1,430
HEALTH TECHNICIANS, TECHNOLOGISTS	36,850	46,750	9,950	27	1,350	830	520
CLINICAL LAB TECHNOL & TECHN	11,050	12,450	1,400	12	260	120	140
DENTAL HYGIENISTS	4,550	5,450	900	20	110	80	30
EEG TECHNOLOGISTS	300	400	150	43	20	10	10
EKG TECHNICIANS	650	700	50	10	20	10	10
MEDICAL RECORDS TECHN.& TECHNOL.	1,800	2,700	900	52	110	80	30
NUCLEAR MEDICINE TECHNOLOGISTS	450	550	100	25	10	10	0
RADIOLOGIC TECHNOL. & TECHNICIAN	4,500	6,600	2,100	46	230	180	50
SURGICAL TECHNICIANS	1,300	2,050	700	54	90	60	30
ALL OTHER HEALTH PROF./PARA/TECH	12,250	15,850	3,600	29	530	300	230

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

PRELIMINARY

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WRITER, ARTIST, ENTER., ATHLETE	43,000	52,950	9,900	23	2,270	830	1,440
ARTISTS AND COMMERCIAL ARTISTS	7,500	10,000	2,550	34	410	210	200
BROADCAST TECHNICIANS	650	450	-200	-32	-10	-20	10
CAMERA OPERATORS, TV & MOVIES	250	350	50	28	20	10	10
DANCERS AND CHOREOGRAPHERS	50	50	0	3	0	0	0
DESIGNERS	15,400	20,350	4,950	32	970	410	560
MUSICIANS	3,050	2,900	-150	-5	110	-10	120
PHOTOGRAPHERS	2,850	3,350	500	18	150	40	110
PROD.,DIRECT.,ACTORS,ENTERTAINER	900	1,100	200	19	30	20	10
PUBLIC RELATIONS SPECIALISTS	3,000	3,300	300	10	130	30	100
RADIO & TV ANNOUNCER & NEWSCAST.	1,500	1,700	200	14	40	20	20
REPORTERS AND CORRESPONDENTS	2,000	2,150	150	8	70	10	60
WRITERS, EDITORS, INCL TECHNICAL	5,900	7,250	1,350	23	350	110	240
TECHNICIANS & RELATED SUPP OCC	1,400	1,550	150	12	40	10	30
AIR TRAFFIC CONTROLLERS	550	650	100	19	30	10	20
ALL OTHER TECHNICIANS	850	900	50	7	20	10	10
ALL OTHER PROFESSIONAL WORKERS	10,400	19,600	3,150	19	640	260	380
MARKETING & SALES OCCUPATIONS	475,650	549,300	73,650	15	24,610	6,140	18,470
SALES OCCUPATIONS, SERVICES	47,850	56,400	8,550	18	3,310	710	2,600
BROKERS, REAL ESTATE	2,150	2,650	500	24	180	40	140
INSURANCE SALES WORKERS	16,600	19,100	2,500	15	920	210	710
REAL ESTATE APPRAISERS	1,000	1,200	200	20	80	20	60
SALES AGENTS, REAL ESTATE	19,900	22,900	3,000	15	1,520	250	1,270
SECURITIES, FINANCIAL SERV.SALES	4,150	5,250	1,050	26	330	90	240
TRAVEL AGENTS	4,050	5,350	1,300	32	290	110	180
COMMODITY SALES	427,800	492,950	65,100	15	21,290	5,420	15,870
CASHIERS	82,850	91,200	8,300	10	2,200	690	1,510
COUNTER AND RENTAL CLERKS	7,850	9,150	1,350	17	620	110	510
SALESPERSONS, RETAIL	127,700	146,700	19,000	15	7,330	1,580	5,750
STOCK CLERKS, SALES FLOOR	50,300	56,300	5,950	12	2,600	500	2,100
ALL OTHER SALES & RELATED OCC.	159,050	189,550	30,500	19	8,550	2,540	6,010
ADMIN. SUPPORT OCC., CLERICAL	686,750	756,200	69,450	10	24,750	5,790	18,960
CLERICAL SUPERVISORS & MANAGERS	34,800	37,650	2,850	8	1,180	240	940

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

PRELIMINARY

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INDUSTRY SPECIFIC SUPPORT OCC.	111,350	129,050	17,750	16	3,980	1,480	2,500
BANKING, SECURITY, FINANCE, CREDIT	46,550	53,700	7,150	15	1,470	600	870
ADJUSTMENT CLERKS	12,000	14,400	2,400	20	450	200	250
BANK TELLERS	22,800	25,100	2,300	10	470	190	280
BROKERAGE CLERKS	1,100	950	-200	-16	10	-20	30
CREDIT AUTHORIZERS	650	850	150	25	30	10	20
CREDIT CHECKERS	1,200	1,400	200	19	50	20	30
LOAN AND CREDIT CLERKS	3,950	5,050	1,100	28	200	90	110
LOAN INTERVIEWERS	750	1,000	200	26	40	20	20
NEW ACCOUNTS CLERKS	3,250	4,100	850	26	190	70	120
STATEMENT CLERKS	850	950	50	9	40	10	30
RECORDS PROCESSING OCC.EXC FINAN	64,800	75,350	10,600	16	2,520	890	1,630
ADVERTISING CLERKS	450	500	50	14	20	10	10
BILL AND ACCOUNT COLLECTORS	5,650	6,700	1,100	19	250	90	160
COURT CLERKS	1,150	1,350	200	19	50	20	30
HOTEL DESK CLERKS	2,350	2,950	600	26	160	50	110
INSURANCE ADJUSTERS, INVESTIGATOR	3,400	4,300	900	27	130	80	50
INSURANCE CLAIMS CLERKS	3,950	4,350	400	10	90	30	60
INSURANCE POLICY PROCESS. CLERKS	5,500	5,900	400	8	180	40	140
LIBRARY ASSISTANTS & BOOKMOBILE	5,000	5,450	450	9	160	40	120
MUNICIPAL CLERKS	600	650	50	7	20	0	20
PROOFREADERS AND COPY MARKERS	1,050	1,050	-50	-3	50	0	50
REAL ESTATE CLERKS	600	650	100	15	30	10	20
RES. & TICKET AGT., TRAVEL CONS.	3,050	4,000	900	30	150	80	70
TEACHER AIDES & EDUC. ASSISTANTS	25,950	30,650	4,700	18	1,020	390	630
WELFARE ELIGIBILITY WORKERS	4,350	4,900	550	12	170	50	120
ALL OTHER ADJUST & INVESTIGATORS	1,750	1,950	200	11	60	20	40
SECRETARIAL GENERAL OFFICE OCC.	372,450	408,950	36,500	10	14,170	3,040	11,130
SECRETARIES	112,250	127,900	15,650	14	4,020	1,310	2,710
LEGAL SECRETARIES	8,950	11,100	2,150	24	410	180	230
MEDICAL SECRETARIES	6,850	9,450	2,600	38	400	220	180
ALL OTHER SECRETARIES	96,400	107,350	10,900	11	3,210	910	2,300
GENERAL OFFICE OCCUPATIONS	260,200	281,050	20,850	8	10,160	1,740	8,420
BILLING, COST AND RATE CLERKS	10,650	10,850	200	2	270	20	250
BOOKKEEPING & ACCOUNT & AUDITING	60,100	59,400	-700	-1	2,250	-60	2,310
CORRESPONDENCE CLERKS	500	600	100	25	20	10	10
CUSTOMER SERVICE REPS, UTILITIES	3,800	3,900	50	2	90	10	80
FILE CLERKS	9,000	9,300	300	4	210	30	180

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

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GENERAL OFFICE CLERKS	81,300	92,950	11,650	14	3,640	970	2,670
INTERVIEWING CLERKS,EX.PERSONNEL	2,800	3,200	450	16	140	40	100
ORDER CLERKS: MATERIALS, SERVICE	8,000	7,800	-200	-2	150	-20	170
PAYROLL AND TIMEKEEPING CLERKS	5,850	5,450	-450	-7	120	-40	160
PERSONNEL CLERKS, EXCEPT PAYROLL	3,350	3,650	300	9	90	30	60
PROCUREMENT CLERKS	1,800	1,950	150	9	60	10	50
RECEPTIONISTS, INFORMATION CLERK	28,450	38,250	9,800	35	1,660	820	840
STATISTICAL CLERKS	4,250	3,550	-700	-16	40	-60	100
STENOGRAPHERS	5,000	4,050	-1,000	-20	50	-80	130
TYPISTS AND WORD PROCESSORS	35,400	36,150	750	2	1,360	60	1,300
DATA PROC,COMM EQUIP,DISTRIB,OCC	168,200	180,550	12,350	7	5,420	1,030	4,390
DATA PROCESSING, OFFICE MACHINES	30,050	32,200	2,150	7	550	180	370
BILL, POST, CALCULATE MACH OPER.	3,300	2,900	-400	-12	20	-30	50
COMPUTER OPERATORS, EXC. PERIPH.	8,850	11,500	2,650	30	310	220	90
DATA ENTRY KEYERS, COMPOSING	650	550	-100	-18	0	-10	10
DATA ENTRY KEYERS, EX. COMPOSING	11,750	11,400	-350	-3	60	-30	90
DUPL., MAIL, & OTHER OFFICE EQU.	4,850	5,150	300	6	150	20	130
PERIPHERAL EDP EQUIP. OPERATORS	600	750	100	19	20	10	10
COMMUNICATIONS EQUIP. OPERATORS	10,950	12,550	1,650	15	420	140	280
CENTRAL OFFICE OPERATORS	2,500	1,950	-600	-23	0	-50	50
DIRECTORY ASSISTANCE OPERATORS	50	50	0	-28	0	0	0
SWITCHBOARD OPERATORS	8,250	10,500	2,250	27	420	190	230
ALL OTHER COMMUNICATION OPERATOR	100	100	0	8	0	0	0
MAIL & MESSAGE DISTRIB. WORKER	25,200	26,950	1,750	7	1,020	150	870
MAIL CLERKS, EXC. MAIL MACHINE	4,900	4,600	-250	-6	150	-20	170
MESSENGERS	4,700	5,100	400	8	280	30	250
POSTAL MAIL CARRIERS	11,150	12,450	1,300	12	440	110	330
POSTAL SERVICE CLERKS	4,450	4,750	300	7	160	30	130
MATERIAL RECORD., SCHED.,DISTRIB	83,850	87,750	3,900	5	2,720	330	2,390
DISPATCHER:EXC. POL.,FIRE,AMB.	4,950	5,550	600	12	180	50	130
DISPATCHER:POLICE,FIRE,AMBULANCE	2,250	2,450	200	10	80	20	60
METER READERS, UTILITIES	1,450	1,150	-300	-22	-10	-30	20
ORDER FILLERS, SALES	4,250	4,550	300	8	150	30	120
PRODUCTION, EXPEDITING CLERKS	9,350	9,200	-150	-2	240	-10	250
STOCK CLERKS:STOCKROOM OR WAREH.	27,600	28,650	1,050	4	860	90	770
TRAFFIC, SHIPPING, & REC. CLERKS	23,550	24,950	1,400	6	790	120	670
WEIGHERS, MEASURERS, CHECKERS	3,700	3,800	100	3	150	10	140

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
ALL OTHER MATERIAL WORKERS	6,750	7,450	700	10	290	60	230
ALL OTHER CLERICAL & ADM.SUPPORT	18,200	21,100	2,900	16	720	240	480
SERVICE OCCUPATIONS	664,550	783,750	119,200	18	34,920	9,930	24,990
FIRST LINE SUPERVISORS, SERVICE	11,700	13,700	1,950	17	570	160	410
FIRE FIGHTING & PREV.SUPERVISORS	2,100	2,250	150	7	110	10	100
HOUSEKEEPERS, INSTITUTIONAL	4,450	5,800	1,350	31	340	110	230
POLICE AND DETECTIVE SUPERVISORS	5,200	5,600	450	8	120	40	80
PRIVATE HOUSEHOLD WORKERS	32,900	24,800	-8,100	-25	2,330	-680	3,010
CHILD CARE WKRS., PVT. HOUSEHOLD	12,700	9,250	-3,400	-27	80	-290	370
CLEANERS & SERVANTS, PVT. HOUSE.	18,100	13,900	-4,200	-23	1,980	-350	2,330
COOKS,PRIVATE HOUSEHOLD	750	600	-200	-23	150	-20	170
HOUSEKEEPERS AND BUTLERS	1,350	1,000	-300	-23	110	-30	140
PROTECTIVE SERVICE OCCUPATIONS	80,650	100,050	19,400	24	810	470	340
CORRECTION OFFICERS AND JAILERS	5,950	8,400	2,400	41	300	200	100
FIRE FIGHTERS	9,150	9,850	700	8	140	60	80
FIRE INSPECTION OCCUPATIONS	550	600	50	7	20	0	20
OTHER PROTECTIVE SERVICE WORKERS	36,800	49,650	12,850	35	3,840	1,070	2,770
CROSSING GUARDS	1,650	1,750	50	4	230	10	220
GUARDS	35,150	47,950	12,750	36	3,610	1,060	2,550
POLICE DETECTIVES & INVESTIGATOR	2,550	2,800	200	9	40	20	20
POLICE PATROL OFFICERS	17,250	19,550	2,300	13	310	190	120
SHERIFFS & OTHER LAW ENFORCEMENT	2,750	3,000	300	10	160	20	140
DETECTIVES AND INVESTIGATORS	1,550	1,850	300	20	140	30	110
SHERIFFS AND DEPUTY SHERIFFS	1,200	1,150	-50	-3	30	0	30
ALL OTHER PROTECTIVE SERVICE	5,600	6,150	600	11	140	50	90
FOOD & BEVERAGE SERVICE OCC.	274,150	328,050	53,900	20	11,360	4,500	6,860
BAKERS, BREAD AND PASTRY	5,150	6,900	1,750	34	330	150	180
BARTENDERS	18,200	21,500	3,300	18	930	270	660
COOKS, FAST FOOD AND SHORT ORDER	30,350	33,500	3,150	10	770	260	510
COOKS, INSTITUTION OR CAFETERIA	11,450	12,400	950	8	430	80	350
COOKS, RESTAURANT	15,850	19,700	3,850	24	840	320	520
DINING ROOM & BARTENDER HELPERS	14,500	17,650	3,200	22	490	270	220
FOOD COUNTER, FOUNTAIN & RELATED	49,050	55,100	6,050	12	1,860	500	1,360
FOOD PREPARATION WORKERS	36,900	43,000	6,100	17	1,730	510	1,220

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
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1988 - 2000

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HOSTS & HOSTESSES: REST., LOUNGE	6,900	8,850	1,950	28	380	160	220
WAITERS AND WAITRESSES	63,950	80,850	16,950	26	2,310	1,410	900
ALL OTHER FOOD SERVICE WORKERS	21,900	28,600	6,700	31	1,300	560	740
HEALTH SERVICE OCCUPATIONS	87,800	112,550	24,800	28	4,860	2,070	2,790
AMBULANCE DRIVERS & ATTENDANTS	150	150	50	22	0	0	0
DENTAL ASSISTANTS	7,500	9,150	1,650	22	200	140	60
HOME HEALTH AIDES	7,900	13,400	5,500	70	950	460	490
MEDICAL ASSISTANTS	9,900	14,550	4,700	47	640	390	250
NURSING AIDES AND ORDERLIES	46,800	55,700	8,900	19	2,170	740	1,430
OCCUPATIONAL THERAPY ASSISTANTS	400	550	150	36	20	10	10
PHARMACY ASSISTANTS	4,250	5,350	1,100	25	190	90	100
PHYSICAL, CORRECT. THERAPY ASSIST	1,300	1,800	500	39	70	40	30
PSYCHIATRIC AIDES	5,850	6,900	1,050	18	270	90	180
ALL OTHER HEALTH SERVICE WORKERS	3,750	4,950	1,200	33	340	100	240
CLEAN & BLDG.SERV OCCUP EX.PRIV	102,900	115,350	12,450	12	6,840	1,040	5,800
JANITORS, CLEANERS, MAIDS	95,800	107,450	11,600	12	6,390	970	5,420
PEST CONTROLLERS AND ASSISTANTS	400	450	50	13	10	0	10
ALL OTHER CLEAN,BUILDING SERVICE	6,700	7,500	800	12	450	70	380
PERSONAL SERVICE OCCUPATIONS	50,500	60,550	10,000	20	2,600	840	1,760
AMUSEMENT & RECREATION ATTENDANT	4,200	4,550	350	9	160	30	130
BAGGAGE PORTERS AND BELLHOPS	450	600	150	28	30	10	20
BARBERS	1,400	1,400	0	0	120	0	120
CHILD CARE WORKERS	16,900	21,700	4,800	29	980	400	580
FLIGHT ATTENDANTS	2,000	2,900	900	46	120	80	40
HAIRDRESSERS AND COSMETOLOGISTS	19,250	20,150	900	5	670	80	590
MANICURISTS	750	850	100	17	30	10	20
SHAMPOOERS	250	250	0	9	10	0	10
SOCIAL WELFARE SERVICE AIDES	4,150	6,950	2,750	66	490	230	260
USHERS, LOBBY ATT., TICKET TAKER	1,150	1,150	0	-1	10	0	10
ALL OTHER SERVICE WORKERS	23,950	28,700	4,750	20	1,420	400	1,020
AGRICULTURE, FORESTRY, FISHING	110,800	102,800	-8,000	-7	5,350	-660	6,010
FARM OPERATORS AND MANAGERS	51,200	42,000	-9,200	-18	3,510	-770	4,280
SUPERVISORS, FARM, FOREST,AG.REL	1,600	1,700	100	6	60	10	50

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
FORESTRY AND LOGGING OCCUPATIONS	2,350	2,850	500	21	110	50	60
FALLERS AND BUCKERS	1,050	1,250	200	22	50	20	30
LOG HANDLING EQUIPMENT OPERATORS	200	250	50	23	10	0	10
LOGGING TRACTOR OPERATORS	750	950	200	25	30	20	10
ALL OTHER TIMBER CUTTING WORKERS	350	400	50	18	20	10	10
FARM OCCUPATIONS	24,950	21,200	-3,750	-15	260	-310	570
FISHERS, HUNTERS, AND TRAPPERS	250	250	0	-3	10	0	10
OTHER AGRICULTURE & FORESTRY OCC	28,200	32,350	4,150	15	1,300	340	960
ANIMAL CARETAKERS, EXCEPT FARM	2,600	2,800	200	9	70	20	50
FOREST AND CONSERVATION WORKERS	800	900	100	11	40	10	30
GARDENERS AND GROUNDSKEEPERS	23,200	26,750	3,550	15	1,120	290	830
NURSERY WORKERS	1,600	1,900	300	18	70	20	50
ALL OTHER AGRIC./FOREST/FISH.	2,250	2,450	200	9	100	20	80
PRECISION PROD/CRAFT & REPAIR	485,750	499,850	14,100	3	15,270	1,180	14,090
BLUE COLLAR WORKER SUPERVISORS	62,850	63,600	750	1	1,860	60	1,800
INSPECTORS,TESTERS,GRADERS,PREC	32,250	25,100	-7,150	-22	290	-600	890
MECHANICS, INSTALLERS, REPAIRERS	174,900	187,200	12,350	7	2,630	670	1,960
INDUSTRIAL MACHINERY MECHANICS	64,250	72,250	8,000	12	750	120	630
MAINTENANCE REPAIRERS, GEN.UTIL.	37,850	44,400	6,550	17	1,650	550	1,100
MILLWRIGHTS	8,900	8,850	-50	-1	240	0	240
VEHICLE & MOBILE EQUIP. MECHANIC	52,850	58,250	5,400	10	1,540	450	1,090
AIRCRAFT ENGINE SPECIALISTS	200	250	0	9	0	0	0
AIRCRAFT MECHANICS	1,900	2,250	350	20	50	30	20
AUTOMOTIVE BODY,RELATED REPAIRER	8,100	9,150	1,050	13	250	90	160
AUTOMOTIVE MECHANICS	26,950	29,000	2,050	8	710	170	540
BUS, TRUCK, DIESEL ENG. MECHANIC	9,100	10,100	1,000	11	280	80	200
FARM EQUIPMENT MECHANICS	1,000	1,050	50	3	20	0	20
MOBILE HEAVY EQUIPMENT MECHANICS	3,750	4,450	700	18	150	60	90
MOTORCYCLE REPAIRERS	350	300	-50	-10	10	0	10
SMALL ENGINE SPECIALISTS	1,500	1,700	250	15	70	20	50
COMMUNICATIONS EQUIP. MECHANICS	3,950	2,900	-1,050	-27	20	-90	110
CENTRAL OFFICE & PBX INSTAL/RPR.	1,250	900	-350	-28	0	-30	30
RADIO MECHANICS	150	200	0	3	10	0	10
SIGNAL OR TRACK SWITCH MAINT.	100	50	-50	-45	0	0	0
ALL OTHER COMMUN.EQUIP.MECHANICS	2,400	1,750	-650	-27	20	-50	70
ELECTRICAL & ELECTRONIC EQ.MECH.	14,300	14,450	150	1	310	10	300
DATA PROCESSING EQUIP. REPAIRERS	1,250	1,750	500	40	50	40	10

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
ELEC.HOME ENTERTAINMENT EQ. RPR.	1,050	1,150	100	9	40	10	30
ELECTRICAL POWERLINE INSTAL/RPR.	4,850	4,650	-200	-4	80	-20	100
ELECTRONICS REPAIRERS,COMM.&IND.	1,500	1,650	150	11	60	10	50
HOME APPLI.& POWER TOOL REPAIRER	1,050	1,050	50	4	40	0	40
STATION INSTALL & REPAIR, TELE	700	500	-200	-28	-10	-20	10
TELEPHONE & CABLE TV INSTAL/RPR.	2,950	2,250	-700	-23	-40	-60	20
ALL OTH.ELEC&ELECTRONIC EQ.MECH	1,050	1,450	400	40	50	30	20
OTHER MECHANICS,INSTALLERS,RPR.	39,550	39,400	-150	0	1,100	-10	1,110
BICYCLE REPAIRERS	650	700	50	7	20	0	20
CAMERA & PHOTOGRAPHIC REPAIRERS	150	150	0	18	10	0	10
COIN & VENDING MACHINE SERVICERS	450	500	50	7	10	0	10
ELECTRIC METER INSTALLERS/REPAIR	600	600	0	-4	20	0	20
ELECTROMEDICAL & BIOMED. REPAIR.	200	300	50	33	20	10	10
ELEVATOR INSTALLERS & REPAIRERS	250	250	0	7	0	0	0
HEATING, A/C, REFRIG. MECHANICS	7,100	7,500	400	6	210	30	180
MUSICAL INSTRUMENT REPAIR & TUNE	150	150	0	9	10	0	10
OFFICE MACHINE,REGISTER SERVICER	2,050	2,100	50	2	80	0	80
PRECISION INSTRUMENT REPAIRERS	1,500	1,650	150	9	110	10	100
RIGGERS	650	550	-50	-11	10	-10	20
TIRE REPAIRERS AND CHANGERS	2,600	2,900	300	11	60	20	40
WATCHMAKERS	100	100	0	1	10	0	10
ALL OTHER MECHANICS, INSTALLERS	23,100	22,000	-1,150	-5	520	-90	610
CONSTRUCTION TRADES, EXTRACTIVE	122,950	127,000	4,050	3	3,580	340	3,240
CONSTRUCTION TRADES	117,900	122,050	4,150	4	3,500	350	3,150
BRICKLAYERS AND STONE MASONS	5,800	5,950	150	3	160	10	150
CARPENTERS	25,300	27,050	1,750	7	930	140	790
CARPET INSTALLERS	1,100	1,200	150	13	30	10	20
CEILING TILE INSTALLERS	450	500	50	6	10	0	10
CONCRETE AND TERRAZZO FINISHERS	2,800	2,850	50	2	90	10	80
DRYWALL INSTALLERS & FINISHERS	2,200	2,250	50	3	20	10	10
ELECTRICIANS	22,550	23,400	850	4	620	70	550
GLAZIERS	1,150	1,300	150	14	30	10	20
HARD TILE SETTERS	650	650	50	8	20	0	20
HIGHWAY MAINTENANCE WORKERS	6,000	6,400	400	6	250	30	220
INSULATION WORKERS	1,750	1,900	150	8	30	10	20
PAINTERS AND PAPERHANGERS	10,250	10,600	350	4	360	30	330
PAVING, SURFACING, TAMPING	1,650	2,000	300	19	90	30	60
PIPELAYERS & PIPELAYING FITTERS	2,000	1,950	-50	-2	70	0	70
PLASTERERS	250	250	0	-3	10	0	10

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

PRELIMINARY

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
PLUMBER, PIPEFITTER, STEAMFITTER	11,100	11,550	450	4	340	40	300
ROOFERS	3,750	4,100	350	9	80	30	50
SHEET METAL WORKERS,DUCT INSTALL	12,900	12,050	-850	-7	200	-70	270
STRUCT. & REINFORC. METAL WORKER	2,200	2,400	150	8	50	10	40
ALL OTHER CONSTRUCTION WORKERS	4,000	3,650	-350	-9	100	-30	130
EXTRACTIVE AND BLASTING WORKERS	5,050	4,950	-150	-3	70	-10	80
MINING QUARRYING & TUNNELING OCC	100	100	0	-11	0	0	0
ROUSTABOUTS	450	400	-50	-7	10	0	10
ALL OTHER EXTRACTIVE & RELATED	3,550	3,450	-100	-3	50	-10	60
ALL OTHER OIL & GAS EXTRACT OCC	950	950	0	2	20	0	20
PRECISION PRODUCTION OCCUPATIONS	92,600	96,950	4,150	4	3,960	350	3,610
PRECISION METAL WORKERS	56,650	59,100	2,450	4	2,280	200	2,080
BOILERMAKERS	300	350	0	4	10	0	10
JEWELERS AND SILVERSMITHS	600	650	50	8	30	0	30
MACHINISTS	23,600	25,650	2,100	9	970	170	800
SHIPFITTERS	50	50	0	51	0	0	0
TOOL AND DIE MAKERS	23,550	23,800	200	1	890	20	870
ALL OTHER PRECISION METAL WORKER	8,550	8,600	50	1	380	10	370
PRECISION WOODWORKERS	8,900	9,200	300	3	410	20	390
TEXTILE,APPAREL,FURNISH,PRECSION	6,700	7,250	500	8	520	40	480
CUSTOM TAILORS AND SEWERS	2,700	2,850	150	5	250	10	240
PATTERNMAKER,LAYOUT WORKERS,FAB	150	150	0	1	10	0	10
SHOE AND LEATHER WORKERS	550	550	0	-1	60	0	60
UPHOLSTERERS	2,100	2,450	350	17	140	30	110
ALL OTHER PRECISION TEXTILE,APPA	1,250	1,250	0	0	70	0	70
PRECISION PRINTING WORKERS	3,200	3,800	600	19	140	50	90
BOOKBINDERS	350	400	50	11	10	0	10
COMPOSITOR, TYPESETTER,PRECISION	750	750	-50	-3	20	0	20
JOB PRINTERS	550	650	100	20	20	10	10
LITHOGRAPHY & PHOTOENGRAVING,PRE	1,400	1,850	450	32	80	40	40
ALL OTHER PRECISION PRINTING	150	150	50	20	0	0	0
PRECISION FOOD WORKERS	9,750	9,550	-200	-2	330	-20	350
BAKERS, MANUFACTURING	950	1,000	50	3	30	0	30
BUTCHERS AND MEATCUTTERS	6,550	6,650	100	1	270	10	260
ALL OTHER PRECISION FOOD,TOBACCO	2,250	1,900	-350	-15	30	-30	60
OTHER PRECISION WORKERS	7,600	8,100	500	7	270	40	230
DENTAL LABORATORY TECHNICIANS	1,600	1,650	50	2	40	0	40

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

PRELIMINARY

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	GROWTH	REPLACEMENT
OPTICAL GOODS WORKERS	350	400	50	15	20	10	10
PHOTOGRAPHIC PROCESS WORKERS	250	400	150	56	20	10	10
ALL OTHER PRECISION WORKSERS	5,350	5,650	300	5	200	20	180
OPERATORS,FABRICATORS,& LABORERS	702,800	687,150	-15,650	-2	15,270	-1,300	16,570
MACHINE WORKING OCCUPATIONS	234,200	223,950	-5,250	-2	5,690	-440	6,130
MACH.SETTERS SET-UP OPER,TENDERS	87,850	77,000	-10,850	-12	1,190	-910	2,100
COMBIN. MACH.TOOL SET/OPER. M/P	8,400	8,250	-150	-2	240	-10	250
DRILLING,BORING MACH.SET/OP.,M/P	4,900	3,750	-1,150	-24	20	-100	120
GRINDING MACH.SET/OP.M/P	5,850	5,150	-650	-11	110	-60	170
LATHE,TURNING MACH.SETTER/OP,M/P	6,100	5,650	-450	-7	100	-40	140
MACHINE FORMING OPERATORS, M/P	18,750	14,850	-3,900	-21	30	-320	350
MACHINE TOOL CUTTING OPER., M/P	20,400	17,150	-3,250	-16	310	-270	580
NUMERICAL CONTROL MACH.TOOL, M/P	2,950	3,000	0	1	20	0	20
PUNCHING MACH. SETTER/OPER., M/P	3,350	3,350	0	0	70	0	70
ALL OTHER MACH. TOOL CUT & FORM	17,200	15,850	-1,300	-8	290	-110	400
METAL FABRICATING SETTERS & OPER	12,400	10,250	-2,150	-17	70	-180	250
METAL FABRICATORS,STRUCTURAL MET	1,400	1,350	-50	-3	40	0	40
SOLDERING, BRAZING MACH. SET/OPS	400	300	-100	-22	0	-10	10
WELDING MACHINE SET/OPS/TENDERS	10,600	8,600	-2,000	-19	30	-170	200
METAL & PLASTIC PROCESS.MACH.SET	32,750	35,250	2,500	8	1,000	210	790
ELECTROLYTIC PLATING MACH.OPERS.	2,050	1,950	-100	-4	30	-10	40
FOUNDRY MOLD ASSEMBLY/SHAKEOUT	800	400	-400	-49	-20	-30	10
FURNACE OPERATORS AND TENDERS	1,250	1,100	-200	-14	30	-20	50
HEAT TREATING,TEMPERING MACH.OP.	1,600	1,300	-300	-18	40	-20	60
HEATERS, METAL AND PLASTIC	200	150	-50	-25	10	0	10
HEATING EQUIP. SETTER/OPER. M/P	800	850	50	6	40	0	40
METAL MOLDING MACH.OPS/TEND/SET	3,050	2,600	-450	-15	10	-40	50
NONELECTROLYTIC PLATING MACH.OPR	600	600	0	-1	10	0	10
PLASTIC MOLDING, CASTING OPER.	10,500	14,400	3,900	37	570	330	240
ALL OTHER MET.&PLAS.MACH.SET/OPS	11,900	11,900	0	0	280	0	280
WOODWORKING MACHINE SETTERS, OP.	3,700	4,300	550	15	180	50	130
HEAD SAWYERS & SAW MACH.OPR/TEND	2,150	2,500	350	17	110	30	80
WOODWORKING MACHINE OPERATORS	1,600	1,800	200	13	70	20	50
PRINTING, BINDING, & RELATED OCC	12,900	16,250	3,350	26	680	280	400
BINDERY MACH. OPERATORS/SET/TEND	2,450	3,000	600	24	130	50	80
LETTERPRESS SETTER/OPERATOR	750	750	50	4	20	0	20

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

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OFFSET LITHOGRAPHIC PRESS SETTER	3,950	5,250	1,350	34	240	110	130
PHOTOENG.& LITHOG. MACH.OPS/TEND	850	1,150	300	36	60	30	30
PRINTING PRESS MACH.OPS/SET/TEND	1,700	2,050	350	21	80	30	50
SCREEN PRINTING MACH. SETTER/OP.	250	350	100	33	20	10	10
TYPESETTING MACH. OPERATOR/TEND.	1,100	1,300	200	19	50	20	30
ALL OTHER PRINTING, BINDING, REL	1,050	1,250	200	20	50	20	30
ALL OTHER PRINTING PRESS SET/OP.	650	1,100	250	29	50	20	30
TEXTILE MACH.OPERATORS & RELATED	17,150	17,650	500	3	830	40	790
EXTRUDING MACH. OPERATOR, FIBERS	200	250	50	15	0	0	0
LAUNDRY, DRYCLEANING MACH. OPER.	5,000	5,600	550	11	340	50	290
PRESSING MACH.OPERATOR, TEXTILES	1,800	1,950	150	7	120	10	110
SEWING MACH. OPER., NON-GARMENT	7,050	7,000	-50	-1	270	-10	280
SEWING MACH. OPERATOR, GARMENT	2,350	2,300	-50	-2	90	0	90
SHOE SEWING MACHINE OPERATOR	300	150	-150	-46	-10	-10	0
TEXT.DRAWOUT & WIND.MACH.OPS/SET	150	100	0	-2	0	0	0
TEXTILE MACHINE SETTER/OPERATOR	300	250	-50	-10	10	0	10
OTHER MACH. SET,OPERATORS,TENDER	67,450	68,300	850	1	1,750	70	1,680
BOILER OPERATOR,TENDER LOW PRESS	1,000	1,000	-50	-2	40	0	40
CEMENTING & GLUING MACHINE OPER.	1,250	1,200	-50	-3	20	0	20
CHEMICAL EQUIPMENT TENDER	3,000	2,550	-450	-16	30	-40	70
COOKING MACHINE OPER., FOOD/TOB.	600	500	-150	-21	0	-10	10
CRUSHING & MIXING MACHINE OPER.	6,350	5,500	-850	-13	80	-70	150
CUTTING & SLICING MACH. SET/OPS	1,750	1,600	-150	-9	40	-10	50
DAIRY PROCESSING EQUIP. OPERATOR	400	250	-150	-40	0	-10	10
ELECTRONIC SEMICONDUCTOR	300	350	50	10	10	0	10
EXTRUDING & FORMING MACH.SET/OPS	3,900	4,600	750	19	140	60	80
FURNACE, KILN, OVEN,KETTLE OPER.	2,800	2,200	-650	-22	20	-50	70
MOTION PICTURE PROJECTIONISTS	650	650	0	0	50	0	50
PACKAGING & FILLING MACHINE OPER	10,500	9,250	-1,250	-12	110	-100	210
PAINTERS, TRANSPORTATION EQUIP.	2,500	2,000	-500	-19	10	-40	50
PAINTING MACHINE OPERATORS	5,350	6,450	1,100	21	220	90	130
PAPER GOODS MACHINE SETTER/OPER.	1,300	1,150	-100	-8	30	-10	40
PHOTOGRAPHIC PROCESSING MACH.OP.	850	1,200	350	43	50	30	20
SEPARATING, FILTERING MACH. OP.	700	550	-150	-18	0	-10	10
ALL OTHER MACHINE OPERATORS	24,300	27,350	3,000	12	910	250	660
HAND WORKING OCC., INC.ASSEMBLER	151,200	129,000	-22,200	-15	970	-1,850	2,820
PRECISION ASSEMBLERS	8,200	6,600	-1,600	-19	30	-130	160
AIRCRAFT STRUCTURE ASSEMBLY	50	0	0	-29	0	0	0

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations with Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
ELECTRICAL, ELECTRONIC ASSEMBLER	2,250	1,500	-750	-33	-20	-60	40
ELECTROMECHANICAL EQ. ASSEMBLER	1,000	800	-250	-23	0	-20	20
FITTERS, STRUC. METAL, PRECISION	600	450	-150	-26	0	-10	10
MACHINE BUILDERS, ASSEMBLERS	2,500	2,250	-250	-10	20	-20	40
ALL OTHER PRECISION ASSEMBLERS	1,800	1,600	-200	-11	30	-20	50
OTHER HAND WORKERS & ASSEMBLERS	132,350	112,150	-20,200	-15	680	-1,680	2,360
CANNERY WORKERS	2,050	1,950	-100	-6	30	-10	40
COIL WINDERS, TAPERS, FINISHERS	500	500	50	6	10	0	10
CUTTERS AND TRIMMERS, HAND	1,850	2,200	350	19	60	30	30
ELECTRICAL, ELECTRONIC ASSEMBLER	6,300	3,900	-2,450	-39	-110	-200	90
GRINDING AND POLISHING, HAND	5,050	3,750	-1,300	-26	-80	-110	30
MACHINE ASSEMBLERS	1,850	1,150	-700	-37	-30	-60	30
MEAT, POULTRY, FISH CUTTERS	1,000	1,300	300	30	50	30	20
METAL POURERS, BASIC SHAPES	550	350	-200	-35	-10	-20	10
PAINTING AND COATING, HAND	1,900	2,050	200	10	120	20	100
PORTABLE MACHINE CUTTERS	50	50	0	-4	0	0	0
PRESSERS, HAND	150	150	0	5	0	0	0
SEWERS, HAND	50	50	0	4	10	0	10
SOLDERERS AND BRAZERS	650	600	-50	-4	20	0	20
WELDERS AND CUTTERS	14,700	12,000	-2,700	-18	60	-220	280
ALL OTHER ASSEMBLERS, FABRICATOR	66,150	49,400	-16,800	-25	-340	-1,400	1,060
ALL OTHER HAND WORKERS	29,600	32,700	3,150	11	900	260	640
PLANT & SYSTEM OCCUPATIONS	10,600	10,200	-400	-4	270	-30	300
CHEMICAL PLANT AND SYSTEM OPER.	1,150	1,000	-150	-13	20	-10	30
GAS & PETROLEUM PLANT, SYSTEM OCC	400	300	-100	-21	0	-10	10
POWER & REACTOR PLANT OPERATORS	1,500	1,550	0	1	40	0	40
POWER DISTRIBUTORS & DISPATCHERS	600	650	50	8	20	0	20
STATIONARY ENGINEERS	1,350	1,300	-100	-6	40	-10	50
WATER & WASTE TREAT. PLANT OPER.	2,850	3,150	300	11	100	30	70
ALL OTHER PLANT AND SYSTEM OCC.	2,750	2,300	-450	-16	50	-40	90
TRANSP. & MAT. MOVING MACH.OPER.	161,100	169,950	8,850	6	5,160	740	4,420
MOTOR VEHICLE OPERATORS	103,250	114,700	11,450	11	4,180	960	3,220
BUS DRIVERS	6,250	6,950	700	11	260	60	200
BUS DRIVERS, SCHOOL	14,100	16,600	2,500	18	670	210	460
DRIVER/SALES WORKERS	9,600	9,750	150	1	290	10	280
TAXI DRIVERS AND CHAUFFEURS	2,200	2,850	650	29	210	50	160
TRUCK DRIVERS	68,450	75,900	7,400	11	2,710	620	2,090
ALL OTHER MOTOR VEHICLE OPERATOR	2,650	2,700	50	2	40	10	30

PRELIMINARY

STATE OF MICHIGAN
OCCUPATIONAL EMPLOYMENT PROJECTIONS
(For Occupations With Employment of 50 or More)
1988 - 2000

OCCUPATIONAL TITLE	ACTUAL 1988	FORECAST 2000	1988 - 2000 EMPLOYMENT CHANGE NUMBER	1988 - 2000 EMPLOYMENT CHANGE PERCENT	ANNUAL AVERAGE OPENINGS TOTAL	ANNUAL AVERAGE OPENINGS GROWTH	ANNUAL AVERAGE OPENINGS REPLACEMENT
RAIL TRANSPORTATION WORKERS	1,850	1,150	-700	-37	-20	-60	40
LOCOMOTIVE ENGINEERS	150	100	-50	-36	-10	-10	0
RAIL YARD ENGINEERS,DINKEY OPER.	250	200	-100	-30	0	-10	10
RAILROAD BRAKE, SIGNAL, SWITCH	600	350	-250	-38	-10	-20	10
RAILROAD CONDUCTORS, YARDMASTERS	750	500	-300	-38	-10	-30	20
ALL OTHER RAIL VEHICLE OPERATORS	50	50	-50	-51	0	0	0
WATER TRANSPORTATION & RELATED	350	350	0	-4	10	0	10
ABLE SEAMEN, MARINE OILERS	100	100	0	-2	0	0	0
CAPTAINS AND PILOTS, SHIP	150	150	0	-6	10	0	10
MATES: SHIP, BOAT, AND BARGE	50	50	0	20	0	0	0
SHIP ENGINEERS	50	50	0	-24	0	0	0
AIRCRAFT PILOTS, FLIGHT ENGINEER	3,550	4,900	1,350	38	200	110	90
OTHER TRANSPORTATION WORKERS	12,100	12,450	350	3	310	30	280
PARKING LOT ATTENDANTS	750	850	100	15	60	10	50
SERVICE STATION ATTENDANTS	8,150	8,450	250	3	140	20	120
ALL OTHER TRANSPORTATION WORKERS	3,200	3,150	-50	-1	110	0	110
MATERIAL MOVING EQUIPMENT OPER.	40,000	36,450	-3,550	-9	490	-300	790
CRANE AND TOWER OPERATORS	2,800	2,600	-200	-8	80	-20	100
EXCAVATION LOADING MACHINE OPER.	1,450	1,550	100	9	50	10	40
GRADER, DOZER, SCRAPER OPERATORS	1,650	1,900	250	14	70	20	50
HOIST AND WINCH OPERATORS	200	200	0	-1	0	0	0
INDUSTRIAL TRUCK & TRACTOR OPER.	22,550	18,050	-4,500	-20	-20	-380	360
OPERATING ENGINEERS	6,500	7,350	850	13	220	70	150
OTHER MATERIAL MOVING EQUIP.OPER	3,050	2,900	-150	-5	40	-10	50
ALL OTHER TRANSP.,MAT.MOVING OPR	1,800	1,900	100	6	40	10	30
HELPERS,LABORERS,AND HAND MOVERS	156,300	159,250	2,950	2	3,450	250	3,200
CONSTRUCTION TRADES HELPERS	9,450	9,750	250	3	130	20	110
HELPERS, ALL OTHER CONSTRUCTION	9,450	9,750	250	3	130	20	110
MACHINE FEEDERS AND OFFBEARERS	8,450	6,450	-2,000	-24	20	-170	190
HAND FREIGHT, STOCK, MAT. MOVERS	138,350	143,050	4,700	3	3,300	390	2,910
FREIGHT & MATERIAL MOVERS, HAND	24,350	24,950	600	2	460	50	410
HAND PACKERS AND PACKAGERS	18,300	17,200	-1,100	-6	370	-90	460
REFUSE COLLECTORS	3,200	3,600	400	12	140	30	110
VEHICLE, EQUIPMENT CLEANERS	9,350	9,800	450	5	200	40	160
ALL OTHER HELPER, LABORER, MOVER	83,100	87,500	4,400	5	2,130	370	1,760

Michigan Employment
Security Commission